The Journal
OF THE
Jamaica Agricultural Society.

The more people do the more they can do: he who does nothing renders himself incapable of doing anything: while we are executing one work we are preparing ourselves for undertaking another.

VOL. XIX. SEPTEMBER, 1915. No. 9.

BOARD OF MANAGEMENT.

The usual monthly Meeting of the Board of Management of the Jamaica Agricultural Society was held at the Office of the Society, 11 North Parade, Kingston, on Thursday, 19th August, 1915, at 11.40 a.m. Present: His Excellency Sir Wm. H. Manning, K.C.M.G., C.B. (presiding), Sir Jno. Pringle, K.C.M.G., Hons. P. C. Cork, C.M.G. L. J. Bertram, C.M.G., Dugald Campbell, Geo. McGrath and R. P. Simmonds; Messrs. R. Craig, A. W. Douet, A. C. L. Martin, E. W. Muirhead, Adam Roxburgh, Conrad Watson and the Secretary, Jno. Barclay.

The Hon. J. R. Williams wrote apologising for his absence owing to illness.

The Minutes of the previous Meeting having been printed and circulated were taken as read and confirmed.

The following matters arising out of the Minutes were considered:

(a)— Number of Cases of Flogging for Praedial Larceny.— The Secretary submitted the following letter from the C.S.O.:—

No. 9642-9122. 29th July, 1915.

"With reference to your letter No.. 1187, dated the 19th ult., I am directed by the Governor to transmit to you copies of returns which have been furnished by the Inspector General of Police, showing the number of persons sentenced to be flogged in cases of praedial larceny for the year ended 31st March, 1915, and for the ten years 1905 to 1915."

(Sgd.) ROBT. JOHNSTONE,
Ag. Colonial Secretary

(For the Returns see pages 336 and 337).

(b) Resolution re Sugar.—The Secretary said it had been left to the Staple & Minor Products Committee, without further reference to the Board, to send on to the Government here, a resolution with regard to the sugar industry, to be forwarded to the Home Government. He had therefore forwarded the resolution together with a Memorandum that had been agreed upon, as follows:—

Resolution.—"Whereas the resources of His Majesty's West Indian possessions, and those of this Island of Jamaica in particular as regards the production of sugar, are capable of considerable development, and whereas such development is highly desirable, not only as increasing the prosperity and trade of His Majesty's West Indian possessions but also as rendering consumers in the Mother Country independent of sugar supplies derived from foreign sources.

"Be it resolved that His Majesty's Government be respectfully requested to give its earnest attention to the question of the encouragement of sugar production in this Island; and with this in view, and in order that the necessary capital may be attracted, that such preferential treatment be accorded to British produced sugar for a period of not less than 10 years as would suffice for the further development

of the existing sugar industry, as also for overcoming the initial difficulties to be encountered in establishing the industry in places where it does not at present exist, but where conditions point to the probability of successful continuance when such initial difficulties shall have been overcome."

Memorandum.—"In submitting this resolution and in order to meet the criticisms that may arise as to our asking the Imperial Government to do what may seem financially impossible in view of the necessity for largely increased British revenue as the result of the present war, the committee would urge that at present the amount of British grown sugar imported into Great Britain is small and could not be large for a number of years. That Canada, a growing market for sugar, would be obliged to grant at least the equivalent of any British preferential treatment in order to secure her sugar supplies, failing which she would have to become a buyer in either the Continental market or else the Cuban market, in either case raising the selling price in these markets and thereby affecting the general world price. That the great advantages to British trade in the export of machinery, clothing for the increased sugar growing population, would probably in the earlier years of such preferential treatment more than recoup any revenue losses from the preferential treatment of the comparatively small amount of British grown sugar entering Great Britain at this time: That connections formed in the first place with British capitalists and manufacturers in the development of the sugar industry are likely to remain with them, and the benefit of these would extend far beyond the period of their term of preference now asked for."

The Chairman said he had sent the resolution to the West India Committee instead of the Secretary of State for the Colonies, and in doing so, he said, that from the letter which had come from the West India Committee he was not quite sure whether it was intended that the resolution should go direct to the Secretary of State or whether it should be sent to the West India Committee, because in the latter's letter he (the Governor) thought they deprecated the idea in view of the present situation in the Mother Country whether the resolution should be sent now direct to the Secretary of State. He had, however, pointed out to the West India Committee that if they desired him to send the report direct to the Secretary of State for the Colonies they should inform him and he would do so.

(c) *Foot and Mouth Disease in U.S.A.*—The Secretary said that at the previous Meeting of the Board he had submitted a letter from Messrs. H. M. Brandon & Co., Grain Merchants, Kingston, stating that although the prohibition against the importation of American hay was still in force here, large quantities of this article were being exported to the United Kingdom on certificate declaring the place of origin to be free from Foot & Mouth Disease, and asking whether the restrictions might be withdrawn here; also the Colonial Secretary's reply to that letter which stated that the Government were making enquiry of the British Ambassador at Washington as to the exact position. He now submitted a letter he had received from the C.S.O. as follows:—

No. 10091-11468. 9th August, 1915.

"With reference to previous correspondence ending with the letter from this office, No. 8740-7342, dated the 10th ultimo, I am directed by the Governor to inform you that His Excellency has just been informed by His Majesty's Ambassador at Washington that another outbreak of foot and mouth disease has occurred at Hornell, New York, U.S.A., where 14 out of a herd of 20 were infected. It is stated that an investigation is being made, that every precaution is being taken, and that the infected animals have been destroyed."

(Sgd.) G. M. WORTLEY,
Ag. Asst. Colonial Secretary.

The Board considered that it would not be prudent to remove the restrictions at present.

(d) Registration of Stallions.—The following letter from the C.S.O. was submitted:—

No. 10106-10903. 10th August, 1915.

"I am directed by the Governor to acknowledge the receipt of your letter, No. 55, dated the 22nd ultimo, intimating that the Board of Management of your Society has been informed by the Honourable J. V. Calder, that he, as Chairman of the Select Committee of the Legislative Council appointed to consider the report of the Live Stock Committee of the Society, on the subject of the Entire Horses Law, and the Registration of Stallions and Asses used for serving mares, has been unable to get a meeting of the committee, owing to the death of the Hon. J. M. Farquharson, and the absence from the Island of Colonel E. A. Moulton-Barrett, and suggesting that new members be appointed to the committee in place of these gentlemen.

"I am to inform you in reply that only the Legislative Council can appoin new members to the committee, and that Mr. Calder was informed on the 8th of February last that His Excellency would have no objection to his moving for such appointments at the next session of the Council."

(Sgd.) Robt. Johnstone,
Ag. Colonial Secretary.

(e) Pod Rot and Canker of Cocoa.—The following letter from the C.S.O. was submitted:—

No. 9595-10737. 28th July, 1915.

"I am directed by the Governor to acknowledge the receipt of your letter, No. 48, dated the *19th instant*, relative to the question of adding pod rot and canker of cocoa to the list of infectious plant diseases, under Law 3 of 1915.

2. "I am to inform you, in reply, that His Excellency accepts the advice as expressed at the meeting of the Board of Management of the Jamaica Agricultural Society on the 14th July, and does not therefore propose to declare the diseases referred to, to be infectious diseases under Law 3 of 1915."

(Sgd.) Robt. Johnstone,
Acting Colonial Secretary.

War Gifts—Further Acknowledgments.—The Secretary submitted the following letters from the C.S.O.:—

No. 9366-10728. 23rd July, 1915.

"I am directed by the Governor to acknowledge the receipt of your letter, No. 47, dated the 20th instant, enclosing Bill of Lading for two hundred and eleven packages of fruit, preserves, clothing, and cigarettes, representing a further War Gift from the members of the Jamaica Agricultural Society which you had shipped to the address of the Crown Agents for the Colonies on the s.s. "Camita" on the 19th instant.

2. "His Excellency desires that an expression of his appreciation of this further kind and thoughtful action may be conveyed to the donors."

(Sgd.) Robt. Johnstone,
Actg. Colonial Secretary.

No. 9985-11389. 6th August, 1915.

"I am directed by the Governor to acknowledge the receipt of your letter, No. 68, dated the 3rd inst., enclosing bill of lading for 60 packages containing oranges, grapefruit, banana figs, and sundry gifts for individual soldiers, and lime juice, representing further war gifts from members of the Jamaica Agricultural Society which you had shipped to the address of the Crown Agents for the Colonies, on the s.s. "Coronado" which left Jamaica on the 2nd instant.

2. "His Excellency desires that an expression of thanks for these further generous gifts may be conveyed to the donors.

3. "I am to add that the Governor has written to the Secretary of State for the Colonies asking that the gift of banana figs may be brought specially to the notice of the War Office, and Admiralty, and that, if possible, the opinion of the men's appreciation of these figs might be obtained."

(Sgd.) Robt. Johnstone,
Acting Colonial Secretary.

The Secretary said he had published in the newspapers of 9th August some of the acknowledgments of fruit from the various Hospitals in the United Kingdom which showed how greatly the gifts had been appreciated. The Secretary of the West India Committee London, had advised him that the fruit ex s.s. "Coronado" had been

sent to the Grand Fleet, Grapefruit being particularly appreciated by the sailors. Mr. Aspinall also enclosed a letter of thanks to the Society from Lieut. E. Hilton Young written on behalf of Admiral Sir Jno. Jellicoe, as follows:—

H.M.S. "Iron Duke,"
C/O. G.P.O., London,
4.7.15.

"I am directed by Admiral Sir John Jellicoe, Commander in Chief, Grand Fleet, to thank you most sincerely, on behalf of the officers and men under his command, for the very acceptable present of fruit and preserves, from the members of the Jamaica Agricultural Society.

The fruit which arrived quite safely, has been distributed amongst the ships of the Fleet, and has been much appreciated.

I am to say that the Ships' Companies are most grateful to the members of the Society for their kind thought; and that it is a particular pleasure to them to receive this token of remembrance from their fellow countrymen over-seas."

(Sgd.) E. HILTON YOUNG, Lt.

The Secretary stated he was trying to keep up regular shipments every fortnight.

Resignation of Mr. Spooner.—The Secretary read the following letter he had received from Mr. Spooner:—

July 24th, 1915.

"I much regret to have to ask you to place my resignation as a member of the Board of Management before the Board.

I have accepted the management of Bendals Central Sugar Factory, Antigua, and expect to leave Jamaica on August 9th.

Please convey to the members of the Board of Management my very best wishes for a successful continuance of the excellent work that the Jamaica Agricultural Society has done, and permit me to assure you that any information I may have or be able to collect, will always be at the service of the Society."

(Sgd.) ARCHD. SPOONER.

The Board expressed their regret at losing Mr. Spooner's valuable services. Mr. Craig moved that Mr. A. W. Farquharson be called to the Board in place of Mr. Spooner. Mr. Farquharson was largely interested in the sugar industry and he would represent that body on the Board.

Sir Jno. Pringle seconded and the motion was carried unanimously.

Cotton-Growing.—The Secretary submitted a copy of a Circular from the British Cotton Growing Association, explaining how the guarantee from the Fine Spinners' Association to take all the crop sown in 1915 at a fixed price, under certain conditions, would work.

The Secretary said that unfortunately there would not be much planting of Sea Island Cotton this year, as in the particular districts where it had been nearly all grown (Vere), owing to the high price of sugar and the fine seasons, everyone was putting in sugar for all he was worth. These were the best seasons they had had since 1906 and it was a pity that they could not be taken advantage of for planting cotton. Sugar at present, however, was of course more certain.

Mr. Watson said in connection with the cotton industry, he desired to submit a Memorandum correcting some misstatements made in the Annual Report of the Director of Agriculture. (This is published on page 338 of this JOURNAL).

Matters referred from General Meeting.—The Secretary said some matters in connection with the cocoa industry had been left over from the Half-Yearly General Meeting to be dealt with by the Board. These were:—

(a) More efficient means and methods of inspection of Produce Buyers Books.

(b) Permits to sellers of Cocoa.

(c) Severer punishment for breaches of the Produce Protection Law.

There were resolutions from Branch Societies on all these subjects: he thought that they had all been dealt with in the Report of the Special Committee appointed by the Society to consider the Produce Protection Law, which had been sent to the Government.

The President said the amendments to the Produce Protection Law already suggested by the Society were not likely to be dealt with by the Legislative Council until after the War. Consideration of the whole matter had been held over from the last Meeting of the Legislative Council, and would not likely be dealt with at the next session of the Council. If there were any fresh points the Society had to bring forward, they could send them on to the Government, and at the proper time the whole matter could be threshed out in the Legislative Council.

It was agreed that meantime the resolutions from the Branch Societies should be referred to the Special Committee which had already dealt with the subject.

Applications for Affiliation.—Application for affiliation from Wallingford near Guy's Hill was again submitted and held over for further enquiry as members familiar with the district stated that it was too near the already existing Branches of Guy's Hill, Mt. Angus and Lucky Hill. The Secretary said he had enquired of the Guy's Hill Branch whether this proposed new Branch Society would interfere with their operations, and they had replied that it would not, but he had not enquired of the Mt. Angus and Lucky Hill Branches.

The matter of affiliation was deferred until the Secretary enquired of these Branches.

Instructors.—The Reports of the Instructors for the month of July and their Itineraries were submitted and directed to be circulated to the Instructors Committee as usual.

The Secretary said that immediately after the storm, he had written the various Instructors informing them that as their proposed Itineraries would be interrupted at any rate, they should go through as much of their districts as possible and send in as specific a report as they could on the damage done.

The Chairman said that he was probably expected to make a statement as regard storm damages. He would do so.

(The remarks of the Governor are published on page 340 of this JOURNAL.)

Statement of Accounts was submitted and tabled.

New Members.—The following new members were elected:—

E. O. Anderson, Lionel Town, Alley.

W. G. Twiney, 5 North St., Kingston

The Meeting adjourned until Thursday, the 16th September 1915, at 11.40 a.m.

RETURN SHOWING THE NUMBER OF PERSONS SENTENCED TO BE FLOGGED IN CASES OF PRAEDIAL LARCENY FOR YEAR ENDED 31ST. MARCH, 1915.

Parish.	First Juvenile Offenders.	2nd.	3rd.	4th.	5th.	6th.	7th.	
Kingston ..	—	—	—	—	—	—	—	Of the 20, one was an adult. Eleven of this number, juveniles, had been flogged previously on first conviction. Of the remaining six, three were adults and three juveniles. One of the Juveniles had been flogged previously. One of the adults had been flogged previously three times and another once.
St. Andrew ..	4	—	—	—	—	—	—	
St. Thomas ..	6	—	—	—	—	—	—	
Portland ..	8	—	—	—	—	—	—	
St. Mary ..	4	—	—	—	—	—	—	
St. Ann ..	20	8	—	—	—	—	—	
Trelawny ..	27	2	1	1	—	—	—	
St. James ..	23	—	—	—	—	—	—	
Hanover ..	8	—	—	1	—	1	1	
Westmoreland ..	7	1	—	—	—	—	—	
St. Elizabeth ..	13	2	—	—	—	—	—	
Manchester ..	15	5	1	—	—	—	—	
Clarendon ..	30	1	—	—	—	—	—	
St. Catherine ..	—	—	—	—	—	—	—	
Total ..	165	20	2	2	—	1	1	

A. E. KERSHAW, Lieut.-Col., Inspector General of Police.

RETURN SHEWING THE NUMBER OF PERSONS SENTENCED TO BE FLOGGED FOR PRAEDIAL LARCENY DURING THE TEN YEARS ENDED 31ST. MARCH, 1915.

	Convictions.										Total.
	First Juvenile Offenders.	2nd.	3rd.	4th.	5th.	6th.	7th.	8th.	9th.	10th.	
1905-1906 ..	132	24	13	14	3	—	—	—	—	—	186
1906-1907 ..	83	30	24	9	1	—	—	—	—	—	147
1907-1908 ..	190	60	25	21	4	1	1	—	—	—	302
1908-1909 ..	190	51	34	16	2	5	4	—	—	—	302
1909-1910 ..	91	12	6	6	1	2	—	—	—	—	118
1910-1911 ..	117	21	7	2	2	1	—	—	—	—	150
1911-1912 ..	116	7	5	1	1	—	—	—	—	—	130
1912-1913 ..	195	12	4	—	—	—	—	—	—	—	211
1913-1914 ..	220	17	7	—	1	—	—	—	—	—	245
1914-1915 ..	165	20	2	2	—	1	1	—	—	—	191
Total ..	1499	254	127	71	15	10	6	—	—	—	1982

COTTON.

The following memorandum *re* the position of the cotton industry was submitted by Mr. Conrad Watson at the Meeting of the Board of Management of this Society held on Thursday, the 19th inst.

The statement once made by the Director of Agriculture that the Sea Island Cotton Industry is in reality of very remote interest to the general agriculture of the Island, is probably correct, but in the last Report of the Department of Agriculture considerable space is devoted to efforts to justify this judgment of 1909.

The depressed state of the Cotton market has not affected the Sea Island variety as much as is inferred, for the British Cotton Growing Association has guaranteed a minimum price of 1/2 per lb. for good Sea Island Cotton for the coming crop; it does, however, appear to have affected the sale of Cauto Cotton for there is no demand for it to-day, and the 1,000 acres to be grown by the Cauto Cotton Company, which was to be of such inestimable benefit to the Island, has not exceeded 50 acres.

There are no grounds for the statement that the 1914 crop of Sea Island Cotton was a commercial failure, as the peasantry sold all good seed Cotton locally at 3d. per lb., and the lint was sold in Liverpool from 1/- to 1/3 per lb.

The impression that the crop was a failure is probably due to small export returns the greater portion of the crop having been burned in the warehouse in Jamaica.

The cultivation of inferior types of Cotton should not be encouraged; there is a tendency towards the use of better and better Cotton and efforts are continually being made to improve varieties; this ought to be sufficient reason for not cultivating the type grown by the Arawaks.

In 1902 an extraordinary yield at the rate of 380 lbs. per acre of lint of Sea Island Cotton was obtained at Hope, present value larely a yield of 900 lbs. of seed Cauto Cotton equal to 324 lbs. lint, present value £10 16s. 0d. was obtained from ratoons, showing a difference of £11 7s. 4d. in favour of Sea Island Cotton, but no correct conclusions can be drawn from such isolated experiments.

The late plants and the late ratoons of the Cauto Cotton failed to give a crop owing to the rotting of the bolls; such a failure in a perennial is significant—it will probably happen again with the same plants, and if the plants only last say 5 years, and if 1 or 2 crops be lost, the average for 5 years will be considerably reduced.

It is reported that 50 bales of Cauto Cotton have been reaped from a cultivation on the limestone formation, but a bale might be any weight from 200 to 500 lbs., therefore the yield cannot be compared with that of Sea Island Cotton which has also given large returns, when grown on the same type of soil. It must also be remembered that the value of 500 lbs. of Sea Island Cotton is equal to that of 1,000 lbs. of Cauto Cotton.

When Cauto Cotton was introduced, its chief recommendation was, that it was hardy and immune to pests, but it is now admitted that the plants are subject to boll rot and are attacked by Black scale, Snow Scale, Leaf Blister Mite, Cotton stainers and caterpillars; the plant being a perennial will have to be treated for such pests, and the cost of doing so will exceed the cost of planting annually.

The failure of the Cotton Company in 1905 which is always used as an argument against Sea Island Cotton appears to have been principally due to ignorance of the proper methods of controlling the caterpillars.

In the Bulletin of the Department of Agriculture for September, 1905, the Manager of the Company wrote:—"The cotton worm is a serious matter and information is badly required as to best mode of treatment."

In the same Bulletin, the present Director oof Agriculture advises that intervals be left in the fields to allow of a spraying machine drawn by a mule being used.

The planters and their advisers attributed the failure to every possible cause except their lack of experience.

The Report states that the Vere Estate Coy. was planning to plant 1,000 acres of Sea Island Cotton in 1906; exactly the same plans seem to have been made by the Cauto Cotton Company in 1914 with the same results.

With respect to the destruction of the cotton crop of St. Catherine by rain in 1906, no crop should have been there at that time of the year to be destroyed.

The acreage of Sea Island Cotton for several years has been published to prove the failure of the Industry. If, however, the export values for the corresponding period had also been published the opposite impression would be produced.

1910 62 acres, export value £868; value per acre, £14 0s. 0d.

1911, 60 acres, export value £1,178; value per acre £19 12s. 8d.

1912, 109 acres, export value £2,727; value per acre, £25 0s. d.

The figures given show that the average value of exports for the 3 years was £19 11s. 9d. per acre, a very high return; but there wee about 200 acres under cultivation in 1912 instead of 109 acres as stated in Report.

The export values are no doubt correct, but it would be quite as misleading to accept such values as the returns from the small acreage given, as to accept as correct the acreage published in the Report.

Figures stop at 1912, and 1914 is previously stated to have been a commercial failure; the result of 1913 is omitted, but the following may be found in the Supplement of the Jamaica *Gazette*, 25th June, 1914:—"Owing to cavourable seasons in 1912 the exports of Sea Island Cotton in 1913 rose to the value of £4,000."

The annual increase of exports of Sea Island Cotton from 13,388 lbs. of Cotton in 1910 to 69,296 lbs. in 1913, proves that with a little encouragement from the Department of Agriculture a stable industry could be established.

Since the above paper was read, I have reason to think that the average under Sea Island Cotton in 1912 was over 250 acres.—C. W.

* * * * * *

The following is the return of the exports of Sea Island Cotton from 1910 to 1914:—

1910	13,328 lbs.	£868	9	0
1911	17,855 „	1,178	6	6
1912	36,229 „	2,727	19	2
1913	69,296 „	4,128	2	6
1914	32,235 „	1,575	12	8

The crop of 1914 was very much larger than the figures show, but all Mr. Eric Anderson's cotton, grown by himself and purchased, was burned in his store.

STORM.

The following is the substance of the Governor's remarks at the meeting of the Board of Management on Thursday, 19th August, as referred to in the minutes:—

The President said perhaps he might be expected to say something on this occasion with regard to the recent storm. He had intended to defer making a statement until he had got further information, but he would just make a few remarks now. Information had no doubt been in the possession of all the members of the Board of Management, of the fact that in most of the parishes, between 80 and 90 per cent. of the bananas were stated to be down. There were certain small areas, however, where the loss was not so great, but they might take it that in the majority of places in the island the loss of the present banana crop was between 80 and 90 per cent. As regards coconuts the loss that had been sustained would not be more than one per cent. As regards cocoa he understood that very little damage had been done, and that damage was principally due to banana trees being blown down on the cocoa trees. With respect to root crops—yams, etc.—he understood that in some districts there had been considerable damage, and this was due to the poles being blown down. But this had not been general. In other districts he had been informed that root crops had not suffered to any great extent. With regard to buildings, with the exception of a few cases, hardly any damage had been done. As he had pointed out, there were a few exceptions, but the damage done to buildings by the storm last week was nothing compared with that caused by the last two hurricanes—the one in 1903 and the other in 1912. As regards the sea coast, from Manchioneal right around to Falmouth, very serious damage had been done. In Manchioneal, the storm had damaged the United Fruit Company's wharf, and the damage was principally confined to smaller buildings—eight in number. In Port Antonio a certain amount of damage had also been done to smaller houses, but no great damage to larger buildings. When they left Port Antonio around the sea coast to Annotto Bay, they found that a number of larger houses had been destroyed, in addition to many smaller buildings, as also the wharf premises. In the smaller towns, such as Hope Bay, St. Margaret's Bay, there had been considerable damage done, to smaller houses. Some of the houses had been lifted from their foundation by the sea. The damage at Buff Bay was more than what it had been in either St. Margaret's Bay or Hope Bay. At the latter place the damage was not only to smaller houses but also to larger ones. In some cases the larger houses had been lifted by the sea right across the road, and those along the sea coast were carried away. There was also much damage to the wharves at Buff Bay. At Annotto Bay considerable damage had also been done. The United Fruit Company's wharf was also damaged and several of the smaller houses. Some of them were lifted from their foundation and carried inland. In Port Maria there was much damage along the sea coast. All the wharves were destroyed and the incoming of the sea had done damage to a number of houses. The damage, generally, was considerable. Further along the coast, embracing Oracabessa and Ocho Rios considerable damage had also been done. At St. Ann's Bay the wharves and wharf houses were damaged, and from this point right on to Falmouth much damage was done. The houses built on the sea coasts were either destroyed or lifted up and carried some distance from their original position. In Trelawny, principally Falmouth, much damage had also been occasioned to wharves and wharf houses. At Montego Bay except for some slight damage to the United Fruit Company's wharf, and the Government Pier, the damage was comparatively small. With regard to the roads, the most serious damage done was in respect to those roads along the sea coast. Starting from Port Antonio right along the roads along the sea coast had been swept away, and this was the case right around the coast to a point beyond Falmouth. The Public Works Department had been busy making a track for

buggies to go over, but he was afraid that it would be some time before motor traffic could go over the roads, but it was hoped to get communication as soon as possible. The Public Works Department were doing all they could and he was able on Monday evening to drive from Port Antonio into Buff Bay. Some parts of the road from Buff Bay to Annotto Bay had been washed away, but it was being put in order, and it would soon be completed as a matter of fact, within the next few days. A great deal of damage to the road had been due to an enormous quantity of sand washing over. Gangs of labourers were put on the roads to have them cleared. The sand on the roads was such that be saw lots of banana carts drawn by mules and cattle experiencing the greatest difficulty in getting through.

With regard to the railway, the track outside of Buff Bay, for about 200 yards had been completely destroyed, and it would take a month, and possibly six weeks before the line could be put in order. Beyond that, except in one place, the damage had merely been done to the earth work. The Director of the Railway was already at work in trying to restore communication between Buff Bay and Port Antonio, but it would take at least six weeks, and probably two months before there would be a restitution of the lines.

In reply to a question put to him, the Governor went on to state that corn had been badly damaged in certain places. He did not know if members of the Board of Management had any further information beyond what he had given.

Mr. Robert Craig said the members of the Board of Management thanked His Excellency for the general statement he had made. The statement which the Governor bad made would have the effect of putting down the gossip that His Excellency did not intend to take any steps to repair the roads.

Sir John Pringle said in Annotto Bay the streets were all cleared, and the roads were also being cleared. The authorities were working hard to put things in order. The wind had blown the sea sand into a swamp and nearly filled it up; a little more filling and in place of what was a swamp there would be land suitable for planting coconuts.

Mr. Roxburgh said one cheerful feature was that the spring suckers had not been blown down—at least that was the case in his parish. With careful cultivation they would have a spring crop, although it would not be until April or May.

The President said he was glad that Mr. Roxburgh had brought forward the point in view of the reports that had been afloat. He understood that this hurricane had done much less damage to bananas than the hurricane in 1903. In 1903 the banana trees were uprooted, but the storm last week bad blown down the trees and what was known as the followers—he had learnt something about bananas since he had been here—were still up; and that in April or May there would be fruit in most districts.

Mr. Roxburgh said, of course, the suckers were shaken and the fruit next year might not be of as good quality as in past years, but still they would have fruit to sell.

Mr. Dugald Campbell said in Lower St. Catherine the young plants in his opinion, were very little damaged, and the fruit would come in in good time next year, as also the ratoons. If the damage was confined to cocoa they would not have suffered very much.

The President said there was no doubt about it, they were fortunate, because the accounts which had come to hand from Galveston stated that the hurricane in that city as well as other parts of America was the worst that had been experienced there, so that after all we had been fortunate here. If the centre of the storm had been 40 miles further south, the island would certainly have been worse off. The best thing to do now was to put on a bright face and get out of the trouble as well as they possibly could.

SOME NOTES ON BORDEAUX AND BURGUNDY MIXTURES.

(*By S. F. Ashby, B.Sc., Microbiologist, Department of Agriculture.*)

These mixtures are now being used by many planters and agricultural Instructors for spraying cocoa against podrot and canker and coconuts against diseases of the leaf and bud. To get satisfactory results the spray must be fine and of uniform strength; both mixtures are solids suspended in water which settle out completely when allowed to stand. The longer the solid can keep suspended the more uniform in strength will be the mixture applied to the trees.

The Microbiologist has recently tested the rate at which mixtures prepared from commercial powders settle as compared with home made mixtures. Three ready-made powders have been tested:—

1. *Burgundy Powder.*—This is a coarse-grained gritty green powder prepared by the makers of the Holder pneumatic sprayers and being sold in the island by the local agent of the firm. Several planters have used this preparation in their Holder machines for spraying against podrot and canker of cocoa. Analysis shows the powder to be a mechanical mixture of crystallized sulphate of copper (pure bluestone) 53 per cent. and carbonate and bicarbonate of soda 47 per cent.

When a small bulk of water is added the mixture effervesces, due to escape of carbonic acid gas and the liquid becomes finally slightly alkaline. The proportion of copper present is satisfactory and about 9-10 pounds mixed with 50 gallons of water would be as strong as a normal bordeaux mixture.

Fungi Bordo.—This is a bordeaux powder prepared by the Sherwin Williams Co. of Cleveland; a sample was supplied by the local agents for trial. It is a very fine dry almost white powder guaranteed to contain 11 per cent. copper equal to about 44 per cent. crystallised sulphate of copper. Analysis showed it to contain rather more, equal to 47 per cent sulphate. It was free from moisture and lost weight (6 per cent.) only at a low red heat. When a small bulk of water was added it warmed up and turned blue and became rather gritty and strongly alkaline.

It is very probably a mechanical mixture of calcined (water free) sulphate of copper and ground quicklime. It would, therefore, absorb moisture very greedily from the air and spoil rather rapidly unless kept very securely sealed.

About 10 pounds are required to give 50 gallons of a normal bordeaux mixture.

3. *Caascu* (*K.S.O.*)—This fine pale blue powder is claimed by the makers (Hemingway and Co.) to be a combined fungicide and insecticide. The chemical composition given by the makers is:—

Copper hydrate	12 per cent.
Arsenic oxide	34 „ „
Hydrate of lime	45 „ „
Iron oxide silica, etc.	9 „ „

Analysis showed that an equivalent of 12 per cent. copper hydrate was present. It is doubtful if the copper was really present as hydrate and not merely a mechanical mixture of bluestone and slaked lime. About 60 per cent. of the powder consisted of arsenate of lime, a recently introduced substitute for arsenate of lead; it is cheaper than

the latter and contains nearly double the amount of arsenic so that less can be used. The arsenate is applied to plants either as a spray or in powder and serves the same purpose as paris green—to poison biting insects like caterpillars and beetles. The makers advise the use of Caascu at the rate 2½ pounds in 50 gallons. This proportion is satisfactory for applying the arsenate against insects but would not contain enough bordeaux to be of use against fungus; as a fact such a mixture is only 1-7th the strength of a normal bordeaux spray. To apply enough of the latter over 14 pounds in 50 gallons would be required causing great expense and waste of arsenate. Caascu is, therefore, not suited for use as a combined insecticide and fungicide; it would be effective only as an insecticide (against certain insects and *not* against piercing and sucking insects like thrips on cocoa); the price however, is high (19 cents a pound for 5 pound cans) ; as it is, however, only a 60 per cent arsenate of lime, the cost is equivalent to 31 cents for the pure substance which can be bought from another source for 15½ cents a pound in 5 pound packages or at just half the price. The home made *bordeaux mixture* was prepared by dissolving 5 pounds of sulphate of copper (pure bluestone) in 25 gallons water and pouring into it 25 gallons of limewash made up with 3 pounds of quicklime (stonelime).

The home made burgundy mixture was prepared by dissolving 5 pounds of sulphate of copper in 40 gallons of water and pouring into it 10 gallons of water in which 6¼ pounds of washing soda had been dissolved. The mixtures were compared by noting the rate of deposit in glass cylinders of a column 12 inches high. The mixtures required the undermentioned times to settle 10 inches:—

Burgundy mixture (Holder)	5	minutes
Fungi Bordo	10	„
Caascu	7	„
Home made Burgundy mixture	300	„
Home made Bordeaux mixture	150	„

The three factory powders settled out very rapidly while the home made mixture held up very well indeed.

The mixtures were then tested in a Holder pneumatic knapsack spray tank of 4½ gallons nominal and 3½ gallons working capacity. Three gallons of liquid were brought into the tank and the air pressure raised to 75 pounds (3 minutes pumping).

Each successive quart of spray (12 in all) from the bordeaux nozzle was collected separately and sampled. At the start one quart was ejected in one minute: as the pressure fell the time lengthened so that the last quart required 1½ minutes at a pressure of 20-25 pounds. About 16 minutes were needed to empty the tank, the pressure falling from 75 to 20 pounds.

The force of the spray therefore gradually weakened. This reduction of force is the main defect of the pneumatic tanks; it is also evident that it requires half as long again to spray on the last half gallon, as the first half gallon. In actual work this should be remembered and the foliage covered more slowly with the nozzle held nearer as the tank empties. In order to imitate ordinary conditions the tank after being shaken up was carried about on a man's back while the quart samples were collected. The amount of copper in suspension was determined in the samples of burgundy (Holder Fungi Bordo, home made burgundy and bordeaux. With both the

home made mixtures the amount of copper suspended in the first and last quarts were identical proving that no appreciable deposit had occurred during the 16 minutes the tank was emptying. The home made mixtures can be sprayed, therefore, of perfectly uniform strength from a Holder Knapsack tank. The first quart of the spray from a mixture made with *burgundy powder* (Holder) contained 1-3 of the amount of copper originally mixed up with 3 gallons (12 quarts); the amount in the other 11 quarts was fairly uniform but only 2-3 of the proper strength. Owing therefore, to the rapid settling of a part of the mixture 12-15 pounds in 50 gallons are required instead of 8-10 pounds. The first ½ gallon of the *Fungi Pordo mixture* contained twice as much copper as each succeeding half gallon, hence the strength of the spray was only uniform in the last 2½ gallons, the first half gallon being of double the proper strength.

The Caascu mixture was more uniform in strength throughout but even there the first quart contained 25 per cent more arsenate than the succeeding quarts. An arsenate of lead powder was allso tested in the proportion of 2 pounds in 50 gallons. It settled very rapidly in the glass cylinders but when sprayed from the tank the strength was very uniform in every pint except the first which held 70 per cent more arsenate in suspension than in each of the succeeding 23 pints.

The reader will note that the spray ejected from the tank is more uniform in strength than one would infer from the experiments with the glass cylinders. This is evidently due to the air, escaping from the liquid as the pressure falls, keeping the suspended matter in movement. The escaping air therefore acts as an agitator. When the tank is being filled the hose bearing the spraying arm should be held or tied up after turning off the cock; if the hose lies on the ground during filling and closing, a part of the mixture will settle into it and will remain in when the tank is shaken up. As a consequence the first pint of burgundy (Holder) Fungi Bordo or Caascu will contain even more solid matter than was found in the experiments. *Home made* bordeaux and burgundy settle so slowly that no precautions are required. When arsenate of lead is mixed with home made bordeaux or burgundy it keeps up much longer than in water alone.

Conclusions.—The ready made powders intended to replace home made bordeaux or burgundy mixtures are prepared on the wrong principles being merely mechanical mixtures of the ingredients and not the finished product of their mutual action. The great advantage of a finely suspended solid which can be secured only by mixing weak solutions is lost and a coarse rapidly settling mixture results. The home made mixtures are formed by bringing two weak solutions together and the result is therefore, most satisfactory. The home made mixtures cost less than the proprietory articles but are slightly more troublesome to prepare.

Caascu cannot be regarded seriously as a fungicide owing to the small proportion of copper. As an insecticide against caterpillars and beetles on cotton, coconuts, etc.., it could replace paris green or arsenate of lead but its price is double the quotation for pure arsenate of lime. A test in which sprayed foliage was exposed to two heavy showers (1½ in. and ½ inch) within a day showed that it adhered well. Any attempt to use this mixture for spraying cocoa against podrot and thrips will result in failure (at 2½ pounds to 50 gallons)

as it is too weak to control the fungus and the arsenate is useless against a piercing and sucking insect like thrips which must be attacked by a contact spray (an oil emulsion, quassia and soft soap, or nicotine).

The formula for home made bordeaux is:—

5 pounds pure bluestone	25 gallons water
3 pounds quicklime	25 gallons water.

pour limewash into bluestone solution. For a lesser quantity:—

1 pound bluestone	5 gallons water
10 ounces quicklime	5 gallons water

The quicklime should be recently burnt powder or stone lime; the Bristol marble lime imported by the sugar estates for tempering the juice is also well suited. The formula for home made burgundy is:—

5 pounds pure bluestone	40 gallons water
6¼ pounds washing soda	10 gallons water

pour washing soda solution into the bluestone. For a lesser quantity:—

1 pound bluestone	9 gallons water
1¼ pound washing soda	1 gallon.

Mix as before. A burgundy prepared in that way settles out very slowly (a mixture 17 inches deep in the spray tank requires 8½ hours to settle out, while the tank is emptied under 20 minutes during spraying.)

Burgundy is a convenient substitute for bordeaux when good recently burnt lime cannot be had, since washing soda is of uniform strength, cheap, and easily obtained. The compound formed (carbonate of copper) is greenish whereas bordeaux is sky blue. Burgundy dries on green and is therefore invisible which makes it difficult to judge if the spray has been well spread. This point is an advantage for spraying fruit trees, vines or ornamental plants in gardens. Burgundy does not resist rain so well as bordeaux and is not quite so active as a fungicide.

The chemical analyses are by Mr. R. Simmons, F.I.C., Deputy Island Chemist.

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CORN—KEEPING AND STORING.

When we have used the term *keeping* corn before, we have used the same word in two senses, viz: the keeping free from damage by weevils and other insect pests, and also the keeping it over from month to month in a store, that is, storing it. In future, however, we shall use the word keeping in the first sense; that is keeping safe from weevils, etc. A great deal of discussion has taken place on the subject of corn, and it was one of the most interesting subjects at the two last Half yearly Meetings. We do not think the trouble however, is so much in keeping the corn good, as that is only a matter of everybody learningr how to do it, and to enable this to be done we have placed Napthalene at the disposal of corn growers who only store small quantities, while from the Government Laboratory Bi-Sulphide of Carbon can be got for those who store large quantities. Bi-Sulphide of Carbon is not suitable for small settlers to use: it cannot be got in small quantities. Napthalene is easy to get in any quantity and to use. The trouble is in storing the corn; very few small settlers have store rooms at all, and even large planters have not store rooms suitable for corn—that is, where the grain can be treated with Bi-Sulphide of Carbon. A good many who talk about Merchants in Kingston and the Public

Works Department buying up large quantities of corn do not quite quite understand the position. In the United States where there is such a very large production of corn, this crop has always been one of the chief products of the farmers, one of the biggest items of foreign trade; almost every farmer who grows corn is well equipped for this business: he has cribs to keep over the crop in the cob, to be shelled when needed. The merchants who deal in corn are also well equiped to hold it. In every town in the corn growing districts there are stores specially built for corn, in the larger towns where it is collected in large quantities, there are tremendous stores for keeping corn for a year if necessary. All that the Merchant in Kingston have to do is to send an order to their Agents in New York, and they can get down a hundred, five hundred or a thousand bags by every steamer, so that here they need not store away large quantities; the store rooms are on the other side of the ocean. So that while it looks very simple that only native corn should be used here it is not quite so simple when it comes to storing large quantities.

We imported last year 238,285 bushels, and we raised probably an equal quantity here. Our total requirements are probably over 500,000 bushels on an average. We would not, however, require to store our crops as long as in the North as we have a crop half yearly, but we would require to have a storage rooms fitted for corn somewhere to hold over 100,000 bushels just after the crop came in and to hold part of that quantity for from 6 to 7 months for gradual distribution. Of course, this does not mean one store, but perhaps many.

If the merchants in Kingston and the Public Works Department could have an absolute guarantee that the corn would be properly cured and that the quantity would be sure, suitable stores would no doubt be made. It has been suggested that the Government should, move in this way first, but probably the Government would say it is better to leave such matters to private individuals.

There are patent tanks stores made in the United States which are not too expensive, and which have cheap driers in connection with them which could be used and possibly these could be made here. The drying of corn would never give very much trouble if the corn was first properly fit and well cured in the field; no patent driers in the world can make good corn if the grains in the first place, are not good; they cannot be good if the corn is taken in before properly fit. First, we have to get grain of good quality; that has been improving within the last few years, and is now generally fairly good; secondly, we have to get grain properly ripe and full and dry in the field, otherwise it will not stand transportation, but sweat and go mouldy on the way. Then we have to get large enough quantities assured in every district. We should have to get reliable estimates of the crop, if the price to be paid is to be fixed as reasonable on both sides. And the growers have to understand that when a bargain is made selling at less to forestall a neighbour is as had as exacting more in anybody's emergency. All this will take a lot of regulating.

It would be a great thing if we could supply ourselves with all the corn and cornmeal we need in Jamaica, and we prophesy, the time will come.—and that not far away—when it will be done. There are some imported products that we require and we cannot produce as economically as we can buy them, but corn and cornmeal can be more economically produced here than we can import them, if we go the right way about the business.

But the whole trade requires oraanization, combination, and the reasonable co-operation of every man interested in the subject. Co-operation is a great thing, but with most people it is only a nice useful word. Co-operation requires *acts* from each individual concerned. We are prepared to act, but our acts depend to a large extent upon a co-operation of acts, not words, of all those who wish to see something accomplished, something done. The first act is sinking self to some extent. Who is prepared in the corn business not to think of self first, but put the object to be accomplished first?

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CORN GROWING COMPETITIONS.

A favourite method of interesting young people in the work of the farm in the United States and of encouraging them to keep on the land, is for the districts to have Corn Growng Competitions with the offer of substantial prizes. We published some particulars of the enormous yields in some of these competitions in former JOURNALS We noticed lately in one of these Competitions that a boy of 16, cultivating his own acre, produced 165½ biuhels. When we consider the *amount of cultivation given and the quantity of manure put on the* land, compared with the cultivation which on good land here will give 25 bushels per acre, we feel curious to know what results something of the same trouble and expense given to an acre of corn here, would produce.

Here is what this boy did in the way of cultivation and manure:—

"In the spring of 1913 I joined the Boys' Corn Club, and in March I spread *forty two-horse loads of barnyard manure over my land. Then I broke my land* about ten inches deep and used 200 pounds of acid phosphate, 200 pounds of bone meal and 40 pounds of potash mixed. I raised 127 bushels of corn on one acre at the cost of *thirty-eight cents a bushel.*

After I shocked my corn I sowed crimson clover and rye. Early in the spring of 1914 this land received a coat of ten loads of manure. April twenty fifth I plowed my land about eleven inches deep. I harrowed it with a disk and spring-tooth harrow until the land was well pulverized, then I drilled in 440 pounds of fertilizer, the same kind I used the year before.

I had selected the very best of Boone County seed corn, and May second this corn was planted, the kernels six to seven inches apart, in rows three feet six inches apart. I got an almost perfect stand. It was plowed seven times after planting. The corn matured the latter part of September. From this acre I gathered 165½ bushels at a cost of twenty-three and three-quarter cents a bushel. Much of my success in corn raising I owe to the farm demonstrator."

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INSECT PESTS.

(The following is a report by the Government Entomologist made to the Hon. Director of Agriculture.)

MAY PEN AND CHAPELTON TOBACCO INVESTIGATION.

Hon Director of Agriculture.

On Monday, 9th August, the growers in May Pen Section were visited and the general situation talked over as regards cutworm and hardworm injury to Tobacco in previous seasons.

The principal growers are Messrs. Muschett, Palomino, and Roctoo, who cultivate about 180 acres altogether.

Cutworms in 1913-14 season and 1914-15 season would seem to have been a scourge necessitating replanting on several occasions in certain sections and thereby causing an uneven harvest and precipitating planting into less propitious seasons. No control of cutworms was attempted.

Hornworm was worse towards spring although trouble was experienced at other seasons. Dusting with Paris Green in the younger stages was practised but owing to a local superstition in the use of this substance on the more mature leaf it was discontinued, and hand picking totally resorted to. The expense of control was enormous.

The Entomologist met Mr. Rennalls, Secretary of the Branch Society and arranged to present a paper on Insect Control of Tobacco infesting forms on August 25th meeting.

In company with Mr. Schleifer, the Entomologist drove over to Chapelton and several small settlements around Chapelton were visited. Several minor pests were collected on settlers' crops. Black Fly was not yet present on any of the citrus examined. Mealy Bug is most prevalent on settlers cane.

Tuesday morning the Cocoa Plantation of Mr. Robt. Craig was visited and in company with the Overseer, Mr. Tulloch, various sections were visited. The plantation is in excellent order. Thrips is notable for its absence. Lashnosterna grubs at the roots are proving troublesome in areas and material was brought back for breeding out the forms concerned.

In company with Mr. Schleifer, the Entomologist drove out to the Mt. Hindmost district. Mr. Juan Chavarea has 50 acres in preparation for tobacco, but has not since opening cultivation these two years ago had any noticeable trouble from insects. For this season the Jamaica Tobacco Company have ceased to rent Morgan's Valley for Tobacco growing owing to the flooding experienced in recent years and the suffering of the crop in consequence.

Mr. Schleifer's corn patch at Danks Estate was inspected on returning and it is to be regretted that the outbreak of corn ear worms was not noticed and controlled. An average of 25-30 bushels per acre would have been reaped but at present it looks as if 50% of this will be all the good corn owing to rot and insect ravage ensuing upon the ear worm attack. His statistics for cultivation, growing, etc., when made public will however be of interest and justify the experiment.

The Entomologist during the outing was the guest of Mr. Schleifer and economy in buggy hire was thereby made. Moreover the problems of importance to the district were brought to the notice of the Entomologist by the Instructor, and much work was conveniently and expeditiously accomplised.

Mr. Schleifer intends being in Vere in week commencing 23rd inst., and has asked the Entomologist to accompany him if convenient in connection with certain problems of thedistrict notably, Termites on cane. A return would be made to May Pen for meeting on Wednesday. Frankfield and Chapelton Branches meet on subsequent Thursday and Friday.

(Sgd.) ARCHIBALD H. RITCHIE,
Government Entomologist.

(Report on diseased plant material from the Acting Asst. Secretary, Jamaica Agricultural Society.)

The material was forwarded on the 29th ult.

1. Young fruit of mango. A brown rot or anthracnose was present due to *Glœosporium* sp. The disease had started from the stem end of the fruit. The affected fruit should be removed and

burnt or buried with lime and the trees sprayed with burgundy or bordeaux mixture and the spray repeated two weeks later. It is also advisable to prune out dead wood as the latter probably harbours the fungus.

(Sgd.) S. F. ASHBY, Microbiologist.

(*Report on Diseased Corn from Assistant Instructor, Trelawny.*)

A young cob of maize was forwarded with covering letter of the 21st. The disease was corn smut due to the fungus *Ustilago Maydis* (*zeae*). The grains were greatly enlarged and filled with the dark brown spore powder of the fungus. This smut attacks the plant above ground (by air infection) at any stage of growth causing swellings and deformations on stems, leaves and flowering parts: on this account, treatment of the seed before planting with bluestone or formalin which is effective against several other grain smuts, is useless against corn smut.

Treatment.—Go through the cultivation at intervals and look for plants, at any age, showing swellings on leaves, stems or flowering parts. Remove and burn the swollen parts before they burst and free the spore powder. Do *not* throw diseased plants or parts on manure or compost heaps as the fungus multiplies in such rich food and gives rise to air spores which infect by wind. When collecting the diseased parts put those which have burst and show the dark smut powder into paper bags and burn without opening again. Manure made with straw (trash) from a diseased corn patch will carry the disease if spread on land to be planted in corn. After a bad attack of smut grow another kind of crop before planting again with corn. The disease is most destructive in a rainy season and least so in drought.

(Sgd.) S. F. ASHBY, Microbiologist.

(*Report on a defect of mango fruit.*)

The Secretary of the Agricultural Society sent some ripe or nearly ripe mangoes of Number Eleven and East Indian varieties which he stated in a covering letter of the 20th ult. were more or less uneatable from a defect of the flesh. The skin was quite sound but the pulp showed many white spots; these places about ¼ inch across often had irregular margins (finger-like extensions) and a cavity (split) at the centre and were tough without becoming hard. Microscopic examination showed the cells filled with starch grains but no trace of fungus mycelium nor of bacteria. The spots were not bitter to the taste. This appears to be disease of the flesh due to physiological causes, and is no doubt, closely skin to 'bitter pit' of apples, etc. Bitter pit has caused serious loss to fruit growers in Europe, United States, S. Africa and Australia. J. B. Pole Evans descirbes his investigations in Bulletin 1 (1909) Transvaal Dep. Agr. A commission has been working on it in Australia with D. McAlpine as expert; he has issued two reports quite recently. Conclusions are rather vague indicating that the essential factor has not been found yet. The defects may be present in the young fruit; unusual variations of moisture in the soil while the fruit is developing is one suggested cause. It is also stated to be frequent on porous sandy soils in dry seasons. The owner of the trees from which the fruit was picked could doubtless connect the pitting with abnormal weather conditions during the development of the fruit. Such information is well worth recording now in view of a future export trade in East Indian mangoes.

(Sgd.) S. F. ASHBY, Microbiologist.

STORM DAMAGE.

SHORT REPORTS ON THEIR DISTRICTS. SOME SUGGESTIONS, FROM AGRICULTURAL INSTRUCTORS.

St. Mary and Western Portland.

The Storm of the 12th and 13th August, 1915, destroyed the whole of the standing crop of bananas, and these in falling of course damaged the Cocoa trees by breaking the limbs and in some casese breaking off the whole trees. Beyond this the damage to crops was not extensive. Coconuts were blown down here and there, but I doubt if more than one per cent. of healthy trees were broken off. In some places where the coconut trees were growing in heavy clay lands and are affected at the base with a kind of rot probably the loss was as much as four per cent. Some young coconut trees also were twisted about by the breeze leaving large holes in the earth around the base. The pimento crop which is not a great cultivation in St. Mary was destroyed by the trees are practically uninjured.

The magnificent crop of Breadfruits was practically destroyed, Pears and other fruits including the Plantains shared the same fate.

The destruction of the banana cultivations with the exception of the "plants" was so complete that there is practically nothing to hope for except the growth of the young suckers, the tall ratoon suckers from which the Spring crop would have been reaped are so battered, that although they may be standing up straight and may be left standing and may even shoot "bunches," the fingers will I fear be so poor that rejection will be the order of the day. And except other reasons must prevail than the resuscitation of good fruit for export, the wiser plan will be to cut down all suckers which were big enough for the wind to shake them severely, and trust to the younger suckers. When it is decided however to leave such suckers standing every leaf having a particle of green colouring in it should be left on the tree, and not trimmed off merely to secure a neat appearance in the walk, except where they have been twisted and left hanging in such a way that they interfere with the heart leaf when they must be cut off. It will be wise to leave some of the tall suckers where they are no well developed followers to nurse these, even where it is decided that they are not likely to produce good fruit; these should be tested to see if they are badly bruised and if so cut off below the bruise, and the outer leaf sheaths split on two sides at the top of the suckers to prevent their becoming 'hide bound'. By taking the doubtful suckers with one hand as high as one can reach, and about breast high with the other and give a fairly hard pull with the top hand it is usually easy to ascertain if the stem is seriously bruised.

All the chopped up banana stems should be placed in heaps to facilitate future weeding and forking. When banana fields were in good cultivation before the storm there is little else to be done at present, but of course the destruction of the shade over the land will result in a speedy new crop of weeds on the clean lands and rapid growth on the dirty lands, but it would not become me to tell St. Mary planters that weeds are not helpful in their fields, or that their trenches must be kept open.

COCONUTS.—The young trees which were twisted by the wind, hould be set up straight, and if necessary given some support, the

earth teased around them and the holes at the base caused by the trees swaying about in the wind filled in with fine earth and this should be made firm and fresh soil placed around them to cover any young roots which might otherwise be left exposed.

The trees most needing care at present from the effects of the storm especially where they have previously been well cultivated and are free of disease.

I visited the cultivation of the Rev. C. C. Hastings on Tuesday, 26th August where, although some of his best trees had been snapped clean off by the wind, and others very badly damaged, in fact his was one of the worst blown cultivations I have seen, the recovery of the majority was wonderful, there being young pods on the trees looking perfectly healthy which must have been blossoming at the time of the storm, while the growth of gormandizers which could be nursed up to take the place of the trees damaged beyond hopes of ever becoming good trees again was wonderful. And there were pods of all sizes looking perfectly healthy in spite of the storm. All damaged and broken branches should be cut back beyond any broken or torn part, the cuts being made perfectly smooth and tarred over carefully. Beyond this nothing need be done now except to cut off gormandizers, of course in the case of badly damaged trees, one of these, preferaby the one nearest the earth will be allowd to grow to become the future tree, but except for this the more promptly all others are removed the better the chances for a Spring crop.

Small settlers have already replaced the blown down yam sticks, and settled back the disturbed heads, and are as busy as bees planting catch crops, and I feel that writing on this now would serve no useful purpose, except that I would like to say that they should be kept informed as to supplies of seed, etc., by the Agricultural Society, through the Daily and Weekly papers; a monthly JOURNAL in these times does not give information often enough.

W. CRADWICK.

E. Portland and E. St. Thomas.

As far as damage to crops is concerned, this 1915 blow has not been a patch on that of 1903 in my sections of Portland and St. Thomas. The chief damage was done by the sea in this case, whilst with the exception of the bananas but little damage was done by the wind. This was quite different in 1903, when almost every house, every coconut and fruit tree were either laid flat or damaged. In 1915, no houses except one or two close on to the sea were damaged to any extent, though the wharves at Manchioneal and the road from there to Port Antonio and one or two coconut walks actually down on the seaboard were badly wrecked by the pounding of the heavy seas.

At Hectors River a solid block of stone 18ft. x 12 ft. x 3 ft. was broken off the top of a 20ft. cliff and carried inland 55ft. These are actual measurements.

The damage in St. Thomas was slighter than Portland, the increase of loss from bananas, etc., apparently growing as one passed round the coast towards Port Antonio.

The damage to crops is about as follows:—

BANANAS.—St. Thomas section, worst hit near coast round Golden Grove; practically I suppose 90-95% standing fruit gone and some of the spring ratoons, most, however, left standing; though

badly battered, plants are all right. Round Bath and in the interior, the loss of standing fruit is probably about 60% to 75%, and the spring suckers in better shape, plants safe.

In Portland, 95% to 100% bananas gone and a large proportion of spring suckers; a good deal left, however, in the Moore Town and Fellowship section. Practically, the banana crop is gone but St. Thomas will be cutting some fruit in 3 or 4 months, whilst it will be 8 to 10 months before Portland comes back to any extent. The small settlers in St. Thomas, however, have told me that they think the blow a "blessing" as now they can sell every finger they have, whilst for months before they could not sell any at all. The only thing to do is to clean up, fork, leave the green broken leaves on the spring suckers for the present and give all the help possible with mulch or banana trash, or any manure; growing catch crops through the entirely destroyed fields will help pay the bill perhaps.

COCONUTS.—Practically undamaged, 1% loss at most. The most serious aspect of it is that the heavy sheking and wringing of the bunches is causing a large percentage of nuts big and small to fall off blighted. This will shorten the crop now and later perhaps as much as 25 to 40%. The largest loss of trees I have heard of was at Fairy Hill, but chiefly cut down by the sea; less than 200 out of 5 to 10 thousand cover most estates, some much less. The damage by heart wringing, etc., is comparatively slight. The best thing to do is to go carefully through the walks, trim up broken limbs where they in any way tie up the heart leaves, and if the heart is actually broken or damaged badly, give a good dose of Bordeaux Mixture.

COCOA.—No damage except leaves burnt a bit in places and trees injured by falling bananas. These must get immediate attention, straightening up young trees, pruning off clean and correctly, broken limbs, etc., and tarring. Early attention to this will save a lot of trouble later.

PROVISION FIELDS.—Not badly damaged, some yams laid flat, but most can be re-erected, a few perhaps broken off but no really serious loss. Conditions are really the same practically as before the storm here, except that the banana food is gone. This, however, is important as people here were living largely on them. The non-sale of banans since last November, and the slow appreciation of many of the less energetic of the small settlers of the fact that no sale of banana meant no cash and therefore should mean planting plenty of catch crops—caused many to be depending largely on the banana for food. In very many cases provision had been made to meet hard times and there is no shortage of foodstuff at present. Plant more and plant now is the best advice to be given *re* the provision fields. Common sense will say clean up and put straight the damage done.

GENERAL CONDITIONS for the small settler are more favourable than for the large plants, as there is work on roads and estates for the labourer whilst the larger man has to foot the bill of replacement and nothing coming in.

(Sgd.) LEO A. WATES.

North and Central Manchester and St. Elizabeth.

North and North West Manchester, North West St. Elizabeth and South Trelawny are the parts of my district that have suffered most from the recent hurricane. All the bananas grown for shipment

come from these parts and I estimate that 90% of the present and 60% of the spring crop has been destroyed in Manchester and Trelawney, and about 60% present crop and 30% spring in St. Elizabeth.

All fallen banans should be cut up and catch crops of peas and corn be planted between. The keeping of the soil stirred will help to advance the few spring suckers that are left and to bring on some of those that would have been too late for the spring crop. The suckers left for 1917 crop will have to be pruned back and allow a smaller one to take its place, as the land now being open they will grow quicker and be too early.

PROVISIONS.—These have suffered in the banana districts to the extent of about 15% in other districts considerably less the average about 10%. Coffee has suffered in a few districts, but on the whole about 5% of the crop lost. Other crops have not suffered to any appreciable extent.

With the continuous rains we are having all signs will soon disappear except in the banana districts.

THOS. POWELL.

West Central District.

Fully 86% of the fruiting and early spring suckers have been destroyed, while the suckers that escaped have been so badly battered, that they will have an adverse effect on the suckers that will fruit in the early spring. Plant bananas have not felt its effects so badly, and the loss will not be more than 5% to 10%.

I have been advising the small cultivators to chop up the fallen bananas, clean round the roots to allow the peepers to come through, and then select for 1917 spring crop. They would be quite willing to do so, but are unable, from a lack of funds.

Cocoa trees have been damaged to some extent by the fallen bananas; I have advised these trees to be thoroughly pruned and tar applied to the cuts as a prevention of disease.

Yam cultivations have not suffered seriously excepting in a few exposed situations; Macca and hard yams have sustained the most injury, while yellow yams have come off lightly. Other crops have not sustained much damage.

It is very unfortunate for the planters that another disaster should follow so quickly that of 1912 in the west end; and as a consequence many of them who borrowed money from the Loan Banks are in a very serious state.

It has been the crowning disaster to a succession of adverse circumstances; there was no market for their spring crop of bananas, and when opportunity offered later to dispose of a little fruit, the prices had gone down.

Unless the Loan Banks are able to meet them with an extension of time for re-payment (it will be quite 18 months before they will be in a position to make payments, as 25% of their spring crop is destroyed) and unless the Loan Banks will grant new loans to those who have paid back a portion of their liabilities, there seems little prospect of thier paying present liabilities or being in a position to re-establish their banana cultivations.

No lives have been lost or houses damaged.

J. BRISCOE.

Hanover and Southern Westmoreland.

It is impossible to visit every holding during the short time in which it is absolutely necessary to be up and at work over cleaning up and clearing away hurricane damages so as to get the maximum of good results.

The experience gained in 1912 in these western parishes should be of real value now, and the wise man is he who will put to the best use the lessons taught by that hard schoolmaster, and avoid the mistakes that so many made then.

I offer these few suggestions to readers of the JOURNAL in these parishes of Westmoreland and Hanover in the hope that they will be of some use to them:—

1. BEGIN AT ONCE.—As far as I am aware there is no financial aid coming this time, none is available and it is as well for every man to make strenuous efforts to put himself back in his position before the storm by restoring, and where possible, enlarging his cultivaion of saleable produce.

2. BANANA FIELDS.—Cut out and chop up all broken stems. In cases where they were large trees with bunches or were near the time of shooting, leave the stumps as you do in reaping fruit for market, taking care in the latter case to destroy the growing heart.

The young banana trees for 1916 crop are very little damaged and have only in most cases had their leaves "whipped" by the storm These must be left and cared. Fields which have not had a recent forking should now be forked as that will help them to come faster and so restore in the quickest time the large weekly shipments.

COCOA.—This crop has suffered considerable damage by falling banana trees and in a less degree by the force of the wind. The only thing to do now is to *cut out* rather than *cut off* the broken and damaged branches. With your well sharpened pruning knife, make a clean, smooth cut removing the damaged limb from the trunk as its junction with it. All torn and ragged wound caused by tearing and breaking should be smoothed down with the knife. Even bruises on the trunk should be cleaned by cutting a thin slice off immediately under the damage.

A thin coat of tar should be rubbed well into the cut surfaces with a husk made of a piece of cocoanut brush. In excising any portion of the tree the cut should be so made that no water can lodge in it, as this only lays the foundation for canker and dieback.

In the case of young trees being broken off, as for instance, those recently planted from the nursery seedlings, a gormondizer should be encouraged to grow and that will make a new head. On no account must a cocoa tree be chopped with a machette unless the wound made be subsequently smoothed with a knife or chisel.

COCOANUTS.—The Hanover planters will do well to recall the outbreak of leaf disease on their trees after the last hurricane and prevent its recurrence by clearing the trees of all damaged branches that will start fermentation and decay in the "house" of the trees and thus avoid loss later on.

YAMS.—Very little advice can be given about this crop. All sticks should be put back at once and in cases where the vines of unripe yams have been broken off, the hills should not be troubled till it is time to take up heads and then the larger yams can be "junked' and the lower part used as food.

OTHER CROPS.—One lesson we all have learnt, I hope, is the necessity for planting more hurricane resisting crops, such as cassava, sweet potatoes and cocoes. These are all paying crops and in a country where hurricanes may occur at any moment are safer than bananas and yams. Advantage should be taken now of the open fields to plant large quantities of peas and corn as the behaviour of the Kaiser as well as the elements make a large production of food crops a necessity.

R. C. SOMERVILLE.

St. Catherine.

The damage done by the storm in St. Catherine between the 12th and 13th August is considerable, and although to the ordinary observer it does not appear to be as bad as the storms of 1903 and 1912, the effects are far greater because of the unsatisfactory condition of the fruit trade during the previous 12 months, the severe drought which preceded that, and the further fact that few persons had fully recovered from the 1912 blow.

In lower St. Catherine, I estimate the loss of bananas of the present crop (up to March next) at 65 to 70%, while in St. Johns and St. Thomas-ye-Vale there will be no shipments from now until Aptil or May next; the few stems that may mature during that time will be required for home consumption.

For next year's crop, I estimate a loss of between 20 to 30% in quantity, and perhaps 10 to 15% in grade up to September.

Cocoa trees have suffered, the full crop will be short by about 35 to 40% and will be late; the spring crop next year depends on how the trees are now handled.

A large proportion of the yellow yam crop has been destroyed, and perhaps 20% of the negro yams. Coffee and other crops have not been appreciably affected.

BANANAS.—Cut up all fallen suckers, but leave all those that are standing, provided they are not wrung at the neck, or leaning. The idea is "cut up," don't cut down, and so conserve your shade as much as possible . Allow nature to reassert itself, and by October you will be able to decide what should be left and what removed. Where suckers have been uprooted, be careful about your 1917 peepers. Those left back in July for the spring of 1917 will, with the changed conditions, develop rapdily, and will mature at the end of next year; it is advisable, therefore, to select a peeper about 8 to 12 inches high in October. If there are none, then plant a fresh sucker.

COCOA.—Remove all banana suckers that may have fallen in the trees, and where limbs have been broken, cut these off carefully and tar—above all, keep the roots of the trees free from rubbish of every kind, and see that there is proper drainage for every tree. The use of a quart or two of lime to the roots of cocoa trees just now will be helpful in sweetening the soil and keeping off grubs. Where banana cultivations have been badly hit, and the cocoa trees are very young a crop of cowpeas may be helpful, and to those who have lands to spare, the planting of quick growing crops such as sweet potatoes, peas, corn and vegetables will prove not only useful but profitable.

S. LEO. MOSSMAN.

St. Andrew & W. St. Thomas

The hurricane of August 12-13 was not, strictly speaking, a cyclone which is always more destructive, having a circular as well as an onward motion. The result was that fruit trees and bananas became the chief victims. Though in some exposed situations even cocoa and orange trees were uprooted, yet there were other sections which escaped practically undamaged.

Banana has suffered most—a loss to many of the only source of revenue; others have additional strings to their bows—wise men. On all sides the question is being debated whether it pays to cultivate bananas. Here are two convincing facts connected with the industry. A prominent gentleman in one of the western parishes when he started out on the enterprise had his first crop blown down. He resuscitated the destroyed plantation. Again the crop was blown down. Again he restored the plantation with the result that he reaped the crop, and recovered all initial and other expenses. In St. Catherine a planter after sustaining three similar losses in succession became disgusted and sold out. The newcomer was fortunate to reap the next crop, his very first, and this paid for the property.

Following a hurricane the all-important question is how to repair the damaged fields. At once proceed to free the plants from all entanglements and pressure. Bananas left standing and entangled in their own leaves should have these pruned off. Cut up the fallen plants. Coffee pressed down by fallen bananas and branches of trees, should be immediately relieved and lifted again into the light and air. To injured cocoa trees apply the art of tree surgery assisted by the tar brush. It is better to dispense with a branch bearing a few pods and save the tree from future decay. A storm is not entirely an unmixed evil. It brings rain; it leaves on the ground a plentiful supply of manure which should be evenly distributed over the cultivation; many once clustered spots are now well ventilated, a condition which makes for a good crop next season; numerous valuable plants lying on the ground can be replaced at a less cost than when even inferior ones have to be dug up.

The bananas left standing will not produce as fine stems as they would, had there been no hurricane, but will produce good fruits if not followed up by other winds such as harassed the fields after the 1903 storm. These first stems will be valuable for food.

Immediately after the storm the writer straightened up a field of leaning young bananas, drew the soil from about a yard away to the bulb and firmed it round. As far as practicable stable manure was added. To-day they tell no tale of the hurricane. In older fields be careful to see that the plants left standing are well in the ground. This also is an opportune time for the replanting of old fields thus insuring a crop for 1917, while scattered ratoons would produce a crop in 1916.

Notice how much better a young field withstands hurricane, and make it a rule always to have some plant suckers coming up during hurricane season. The same applies to China or dwarf bananas. Cultivate an appreciable percentage of these for local use. Even for shipment these may yet be required. They are shipped from the Canary Islands. Clean up banana fields and plant in some kind of peas, especially cowpea varieties, black eye, quick-increase, caroline, etc. Corn may be planted only at wide intervals.

YAM.—This is one of our most valuable crops, and one concerning which much anxiety was felt. The leaves of those trained on tall trees were battered, but the roots are intact and the vines will soon put on new foliage. In cases where the "poles" fell no time should be lost lifting these up again to prevent the dropping of the leaves. When sticking yams it is always best not to drive the poles very deep, while the portion of the vine between the "bank" and the "pole" should be long enough to prevent injury through falling.

COCOA.—has been badly whipped in some localitiess, but in the great majority of cases the stems and roots have not been wrung and twisted. The trees will bud and bloom at the same time. Remove the profusion of gormandisers. If the crop be at all reduced that will be due more to the heavy rains beating on the flowers.

COFFEE.—Very little of this crop comparatively has been lost. Since the storm the trees have put on new blossoms in the Port Royal Mountains. Be careful to gather the forthcoming crop promptly, so as not to risk loss through heavy rains.

Where coconut boughs are badly wrung, and young ones torn from the cabbage, these should be cut off and some antiseptic applied to close the gateways against disease germs.

Among food crops no ones should fail to plant a few hundred, or thousand holes of cocoes. If the different varieties, "Minty," "Sally" and "Commander" be planted these will mature in the same order, and a regular food supply obtained for six months or more. Next to peas and beans, cocoes and bananas thrive best together. Cocoes are always in demand at remunerative prices, and wind has little or no power over them.

The next best thing after a storm are seasonable showers. These are falling regularly, and considering the suitability of the season for planting sweet potatoes, peas, corn, vegetables, tobacco,, etc., if we must have hurricanes, then let us have them in August.

The cultivations were washed during the storm, especially where there were no blind trenches. Open new trenches where these are needed, and clean old ones as a safeguard against the October rains.

A. P. HANSON.

West Portland.

The greatest loss to the parish perhaps in actual cash for the moment is in bananas. Cultivations along the sea and on high hills have been hard hit, though the greater damage is along the coast. The full crop for this year and the spring crop for next year have been practically wrecked. One is safe in saying that from 90 to 95 per cent. of the bananas have been destroyed. In some cases it will be quite a year before another vrop will be reaped, but in others, within nine and ten months fruits may be had.

Very little damage is done to cocoanuts on the whole. In some cases the trees that suffered, long wanted something to carry them down.

Cocoa has suffered much in some regions, but most of the damage is due to falling trees. Trees have been uprooted here and there, and in some the leaves flagged off. The crop has been damaged considerabe in some localities.

Yams have not suffered much, but breadfruit have been battered badly. Fully half the crop is lost.

It is useless leaving suckers in banana cultivations that have been battered, with all the leaves torn and hanging down, with a hope of getting marketable fruits from them. The small settlers may of course leave the best of the lot here and there as these will give fruits when foods are scarce. In a few cases there is need for replanting, but as in most cases, the suckers have not been uprooted, if the damaged portions of the tree are cut away, say within a yard to a foot of the ground, the followers selected, the rest of undesirables pruned away, the field will soon be alright again.

Crops of peas (chiefly cowpeas) can be reaped from these damaged areas if put in at once. It may also be advisable to run a single row of corn between the bananas.

In some cases where many should establish canes in the place of bananas this is an opportunity. A row of canes put in between the bananas would be a wise thing, to take the place of the bananas in time.

Young cocoanut trees that have been blown down should be immediately raised and propped up. These will in time take root again. It is practically useless propping cocoa trees that are blown down; allow them to remain and they will in time send up suckers. The ones that start nearest to the ground should be left all the others removed. Torn branches should be cut off without delay and properly tarred.

E. A. GUNTER.

Southern St. Elizabeth and Southern Manchester.

As a result of the recent storm over 300 head of goats, chiefly pigs and sheep have perished, only one or two dying in South Manchester. Cassava was upturned, older banana trees fell, again poles gave way and the roofs of several thatched houses were blown off. Provision fields on hill-sides and on depressions with hills surrounding were either carried away or covered by the water of the flood rains. 15.07 inches of rain fell during the month of August, and between 9 p.m. on the 12th and 2.30 p.m. on the 13th 9.01 inches fell. The damage by the storm on the whole was not great when compared to other parts of the Island. The effects on plants of the heavy rain during the storm and subsequent showers, have gladdened the hearts of all the agriculturists here.

E. J. SMITH.

Southfield,
6.9.15.

St. Ann.

The hurricane which passed over this island on August 12th and 13th, did considerable damamge throughout the whole of my district, and has been a serious set back to all. On account of the exceptionally favourable seasons during the last 9 months, the pastures, the water supply, and all cultivation was rapidly recovering from the effects of the severe and persistent droughts from which these districts had suffered for several years. There was abundance of practically everything (except ready money) and apart from the slow demand for bananas and pimento, the present general conditions were satisfactory and the prospects for the near future exceptionally bright. Both man and beast had had the lean years on account of the persistent droughts,

and we seemed to be on the very threshold of more fruitful and more prosperous times, when that much dreaded slip of red paper appeared at the various Telegraph stations throughout the Island filling the mind with anxious thoughts. To say that throughout St. Ann and Trelawny we have not suffered loss and very serious loss would not be true, and have suffered these losses when we could ill afford to do so. But to say that these losses have been as serious as they appeared to be on the morning after the hurricane would be equally untrue. Writing some three weeks after the storm it is most gratifying to note how rapidly things are righting themselves again.

It is difficult even yet to judge correctly of the damamge done to various crops; for instance it is not possible to say what percentage of the coconut crop on the trees at the time of the storm has been damaged, the percentage of yams which may not give the usual return or make "Heads" nor the percentage of bananas which will give profitable bunches, although the suckers are still standing. However, as far as can be estimated at present, the various crops have suffered somewhat as follows:—

I. Coconuts.—Very few trees damaged or blown down, a good many nuts blown off, and quite a number of nuts still falling.

II. Pimento.—Little damage to crop very few trees down.

III. Coffee.—Trees not damaged; a small proportion of the berries blown off.

IV.—Bananas.—A large proportion of the large suckers especially those with bunches blown down; but quite a good proportion of the suckers for the 1916 crop are still standing, but what proportion of profitable bunches these will yield it is impossible to say yet.

V.—In connection with foodstuffs only yams have suffered and these only to a limited extent, where they were blown down they have been put up again and very few will suffer to any extent.

VI. Corn.—Some corn was blown down, but nearly all of it was fit, so that with a little extra curing practically all was saved.

VII. How to treat the fields.—Of course the first thing to do is to carefully remove all damaged limbs and branches from the coconut, cocoa, coffee and other trees and tar the cuts. In treating the banana fields it must be remembered that some will be needed for home use, as well as for export, and perhaps a larger proportion than usual for home use. So that suckers which would not give a bunch for sale, may give one for use at home. It should also be remembered that all the large suckers having been blown down, a sucker which under ordinary conditions would have been too slow will now grow much quicker and may catch the market. Peas and Beans of various kinds should be planted as soon as possible, to provide an early supply of food and help to keep down weeds. Corn may also be planted in the very open places thinly, but remember the bananas are going to grow quickly and will soon crowd the field again. Of course the yam fields have already been treated, and the sticks raised up.

(Signed) E. ARNETT.

Clarendon.

Long ere this reaches those for whom it is intended, all the bananas blown flat or broken would have been chopped in small pieces to be restored to the soil and utilised in making future crops. Re-planting

in case of bananas badly uprooted would also have been done, and the Clarendon planter would have made up his mind to force forward by extra good care the plants left to him, so as not to be altogether out of a spring crop for 1916. An unusual number of suckers will now make their appearance around the rooots and the planter must carefully make his seection for 191' and then get rid of the rest from time to time.

Cocoa and other fruit trees should be carefully attended to, now that the bananas have been put in order. Broken or torn branches should be neatly cut away, the wounds rendered perfectly smooth and tarred over to keep the water and disease germs out. Fortunately, few trees have suffered from broken roots and with proper attention to cocoa a good crop may be expected, possibly a little later than usual.

S. A. SCHLEIFER.

———:o:———

(Written by the Owner of one acre of Bananas.)

There is no coffee through my acre of bananas yet.

When the storm of August was over and the damage ascertained, every banana left standing was tested to see if the trunk had been twisted or wrenched: if it stood straight and hard it was left; no leaves so long as they kept green were removed; every yellow one was cut off. All the fallen limbs were cut up in pieces and not left lying close to the roots, they were piled in a row up the centre. On each side of the pile Cocoe (Tania) holes are being dug 3 ft. apart to be planted from "bits," and between these and the banana roots a row of Cowpeas may be planted. If I could get lime at a reasonable price, I would spread lime through to counteract the possible souring of the soil with so much juicy green stuff on the soil and the heavy rains falling. I am trusting to the trenches which have been cleaned out to keep the soil from being water-logged.

I do not expect bananas before June to August next, but at any rate I can have Cowpeas in 4 months and Cocoes in 6 months, and I will be able to dig Cocoes for 2 years afterwards without disturbing the bananas. A neighbour has planted two rows of corn up the middle of his bananas. If I had 5 acres instead of 1, I would do so too, but I would still plant some Cocoes. I do not think one row of Corn up the bananas will do any harm and the corn will pay for the weeding. A row of Cowpeas on each side of the Corn will do good too.

———:o:———

SUGAR.

A good many of our Branch Societies, in districts where small settlers grow much sugar, are complaining of the low price of what is locally called wet or pan sugar; the average price of this seems to be about 3/- per tin of 64 lbs. It is difficult to sell because the markets are glutted with it, the seasons have been good, there are fine crops of cane, and every little mill is working, while the low price of bananas has probably caused every settler who has both bananas and sugar, to put forth more effort in his sugar. Resolutions have come to us asking the Parent Society to approach the Government to get "something done" so that the small settler might sell his sugar to better advantage. We, however, beg to point out to every Branch Society and to every reader of this JOURNAL, that, per Circular dated 26th September last, we pointed out that although the price of sugar would

be high abroad, this would not affect the small settlers' sugar which was only used by a limited number of people and that if some of those who usually could put a lot of this sugar on the market and were likely to have some storage room, would make dry sugar, this would relieve congestion for the smaller men. We went on to state as follows:

"I suggest therefore that small settlers who have cane mills and have been in the habit of making "wet sugar" should, through their Branches, consider the advisability of making dry sugar in barrels. It is a simple and usually well known process to drain the wet sugar. Then this dry sugar could be sold in the local shops and in towns as Muscovado."

Now 3/- per tin of 64 lbs. is £5 5s. 0d. per ton, but if course wet sugar contains a good deal of moisture compared with dry sugar, so that the price is probably equal to £7 15s. 0d. per ton; but the local price for common dry sugar (Muscovado) is £7 per ton, for export. Now in every district of Jamaica there are small shops selling dry sugar which they buy from merchants in Kingston who themselves get it from a sugar growing district like Westmoreland. This is sold at not less than 3d. per lb. locally which means £28 per ton. Surely there should be enough local enterprize, co-operation, combination, knowledge, experience and labour to enable local sugar makers to dry their sugar in barrels the same as used to be done in other parts quite regularly and commonly. This is a case for self-effort and not a case for the Parent Society or the for Government. The draining of wet sugar in barrels is no doubt a slow process, but after the first batch is done there is always a turn-over. It certainly seems curious to see cartloads of wet sugar pass a string of local shops, and go 20 miles to peddle tins of sugar in such distant markets at 3/- to 4/- per tin, and then to find sometimes the same carts coming back with barrels of dry sugar brought from Kingston.

We do not say that this process is easy, and we know that it is not always easy to sell Muscovado Sugar at a profitable price, for, people are all now keen on buying Brown or White Albion, but we feel that if good clean Muscovado was being offered in country shops not dull dark sugar, it would take well at the present time, because it can be used in Coffee, and Coffee is the chief drink. It also does quite well for sweetening porridges and puddings.

:o:

HOUSEHOLD HINTS.

GUAVA JELLY.—Wash ripe Guavas, top them, put in a copper or enamel vessel, just cover with water and boil until the fruit burst. Then strain off the juice, mix with an equal quantity of granulated sugar, strain again and boil until it will jelly.

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BANANA TRIFLE.—Bananas sliced longways in layers with Jelly or Jam between, covered on top with boiled Custard.

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YELLOW YAM PUDDING.—1 cup Grated Yam, 1 cup Sugar, 1 cup Currants, 1 cup Breadcrumbs. Spice to taste. Candied peel if liked, and Raisins mixed with Currants, if preferred. Banana figs are a good substitute for either or all. One tablespoonful of butter beaten up with the sugar, the yam added last. Suet may be used if preferred to butter.

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SCRAMBLED EGGS WITH GREEN PEAS.—4 eggs, 1 tablespoonful milk, 1 oz. butter, ½ gill cooked green peas, salt, pepper, slices hot buttered toast. Reheat the peas in a little butter, beat up the eggs, add milk and seasoning, melt butter in a small pan, pour in the egg mixture and stir over the fire until it just begins to thicken, then add peas and a pinch of castor sugar. Stir this over the fire for a minute or two, then heap up on toast and serve.

TOMATO SAUCE TO KEEP.—4 lbs. or more of ripe Tomatoes, ½ pint of water. Wash fruit and boil soft, rub through hair-seive and to 2 quarts of pulp add 1 pint Vinegar and 1 tablespoonful of salt, 1 oz. bruised ginger, 2 pegs of garlic, 1 teaspoonful peppercorns, 1 blade mace and a dust of cayenne. The spices in a piece of muslin, boil all together with the lid off the saucepan until thick as cream, then strain, cool and bottle, cork tightly.

(We find the small "bush" or half wild tomatoes which grow up of themselves from seeds of garden tomatoes thrown out, make the best sauce as they possess a peppery pumgency suitable for sauce.—ED.)

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MOCK DUCK.—Put enough dripping in a saucepan to just prevent the potatoes from burning. Slice in as many potatoes as required and 1 onion to each lb. Sprinkle well with pepper and salt, lay bacon on top, cover closely. Cook till potatoes are done over a rather slow fire. This is a delicious Welsh dish.

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GUAVA JELLY.—The following is a professional recipe for making Guava Jelly received from a manufacturer who ships abroad:

Take 12 gallons of fruit and 9 gallons of water. Boil till all is pulp, strain, then add 1 lb. of sugar to each quart of juice, and boil until it is thickening. Smaller quantities in the same ratio.

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ORANGE MARMALADE.—Weigh the oranges before boiling them, and allow 2 lbs. fine white sugar to every lb. of fruit. Boil in plenty of water until they are so soft that the skins can be easily pierced then drain and peel them. Carefully remove the pulp with the back of a teaspoon, and throw the pips and skins into cold water. Cut the rinds into thin strips. Rub a preserving pan quickly round with a cut lemon, and boil the sugar to a syrup with a quarter of a pint of the strained water in which the pips were soaked, to each pound. Throw in the fruit, let it boil, then draw it to the side of the fire, and simmer gently until the marmalade jellies. Put it into jars, cover closely, and store for use. Time, half an hour to simmer the marmalade.

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SCOTCH ORANGE MARMALADE.—There are many ways of making this marmalade; but most agree in the proportion of sugar to fruit. We give the simplest and most economical way: Boil the oranges until they are tender and can be easily pierced with the head of a pin. When this is done, cut them open, remove the seeds, separate the pulp from the rind, and clear off the coarse filmy parts from the orange and some of the white inner part of the rind. Shred the rind, the finer the better, and somer of it may even be pounded and added with the shreds of the pulp. Clarify the sugar, allowing one pound and a half of sugar to every pound of of fruit. Boil the syrup for ten minutes. Throw in the pulp, juice and rind, and let all boil together until the marmalade jellies. Sweet oranges are sometimes used for marmalade, and only a small portion of Seville or lemon pulp and rind is added to flavour. Time to boil the oranges, from three to four hours; marmalade from thirty to forty minutes.

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GUAVA VINEGAR.—To make good vinegar the fruit should be well ripened. Wash and cut in halves, cover with plenty of water and simmer two hours; strain through a colander and then strain juice through a bag. Bottle and then tie muslin over the tops of the bottles. It requires abot five months to turn into strong vinegar.

NOTE.—In filling jars or bottles with juice which is to make vinegar remember that it is well to leave space for plenty of air and only fill receptacles about two-thirds full.

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CHOCHO.—(1) Peel, take out centre and cut in squares. Boil in salted boiling water till tender. Drain and cover with white sauce (half spoon butter, half flour teacup milk).

(2). When boiled drain well and mash and season with salt and pepper, and add a little sauce—or plain milk.

(3). When squares are tender, but not broken, dip in beaten egg and bread crumbs (crackers dried in oven and crushed are just as good) and fry in boiling fat. Many people don't know what boiling fat is; as long as fat hisses and bubbles it is not boiling. It must be perfectly still, with smoke coming from it. Also too many piecies should not be fried at once as they chill the fat. As soon as cooked, each piece should be well drained, if well fried, a colander will drain off all grease.

(4.) They are quite good stuffed. Pare-boiled whole, when tender, cut in half, remove centres, and fill with nice minced meat. Serve with gravy.

STOCK NOTES.

Veterinary Surgeons are not available for the ordinary man who keeps stock in the country, so that as almost everyone keeps stock, knowledge how to treat common troubles in cows, goats, pigs, etc., comes in useful. Any member of the Society can write us for information and if the matter is too technical for us to deal with, we can pass it along to the Government Veterinary Surgeon through the Director of Agriculture and get a reply.

The Society has been importing lately a good many books on different branches of stock-keeping, one object being to find the best consistent with economy. These, however, are nearly all written for circumstances and conditions in Northern countries. Books on stock, simply written, would be most useful to us; but anything we find that can be of use to the ordinary stock-keeper is rather dear, and with some that are dear when you refer to them to find out what you particularly want, you find no description that fits the case you have in hand—there seems always to be something vague, a lack of detail, a lack of specificness as it were. In time, no doubt, there will be books written for circumstances and conditions in Jamaica for ourselves. We have written one on Poultry with which we are familiar, and we have written one on Goats with which stock we have had intimate experience; a simply written book on cattle for Jamaica conditions and circumstances is much needed.

If every reader of this JOURNAL would send us in descriptions of the troubles among stock they meet with and how they treat them, we would within a short time have a large collection of experiences which could be edited by probably more than one man of knowledge in stock keeping, so that something very practical and useful could be issued. With stock as with human beings, prevention is always better than cure.

SHELTER FOR STOCK.—If readers of this paragraph will refer to Poultry Notes in this JOURNAL, they may read something about shelter for stock. There should be shelter provided, not so much for cattle which roam in large pastures and can take some kind of shelter under trees, and which animals also are not so susceptible to the effects of heavy rain, as for horses, goats and pigs.

Small settlers are great sinners in this respect. They are obliged to tether out their asses, mules, goats, pigs, etc., and animals thrive in this way when they are properly attended to better than when running at large; and in our ordinary weather exposure night and day does no harm—probably the stock are even better with fresh air all the time. But when heavy continuous rains come on, then it is a different story: the animals do not eat and cower without shelter, many get so battered they die. By reason of good constitution most pull through, and when sun comes out quickly recover, but many do not recover.

In the storm of 1909, 1912 and now 1915, there was a large mortality among donkeys, pigs and goats, which could have been obviated if these animals could have been brought under shelter even if they could not have been supplied with food during the period of storm.

Stock shelter is an easy thing for settlers to make, and is inexpensive. In fact we go further and state that such shelter should not only be provided so that stock might be brought in in case of a storm of wind or rain—or both, but that this practice would pay for providing

manure also. Even small stock, according to climate either by day or night, should be brought in, given food, and so accustom them to be domesticated and tame: the result of this practice would be a collection of very valuable manure which could be put on the land. It would cost a little trouble at first until the animals got accustomed to what was expected of them, but after that would be a most useful practice; the stock indeed might thrive better than being tethered or pastured out all the time.

BAD LIVERS.—On some soils in Jamaica almost all cattle—even 'though only 2 years old—when killed are found to have bad livers. The curious thing is that this does not seem to affect them much and they may go on living until 4 years old or more, growing and fattening all the time. There is often a charge made that cattle drinking from ponds cannot be healthy. Yet they have healthy livers although they often suffer from Strongyli. On the heavy black soils, however, where there are streams, and where no proper drinking pools are made, cows drink from the same marshy puddles, far worse places than ponds. These cows become infested with Fluke Worms, and the cause of the bad liver is the Fluke Worm. A few liver Flukes in an animal cause little trouble and it seems that there must be some weed in the pastures which being eaten acts medicinally and helps to keep the chest in check, otherwise, the animals could not go on living for 4 years without becoming as greatly infested that they would show external symptoms, of unthriftiness, and perhaps ultimately die. Very few of the cattle, however, that are killed, whose livers are really bad show any external symptoms of being affected much. All the cattle where this liver rot is prevalent should be given *rock salt* as the Fluke Worm is sensitive to the effects of salt. Good drinking places ought to be made for the cattle so that they may not drink out of puddles.

:o:

POULTRY NOTES.

We have continually written in this JOURNAL about the prudence of erecting shelter, cheap houses for poultry. No matter how even our climate usually is, and how fowls like best to roost upon trees, and keep good health there during ordinary weather, whenever a storm of wind and rain comes along—and the two usually come together—there is more damage done to the fowls than the cost of erecting a fowl house and a small enclosure to oblige them to roost in the fowl house.

In November 1909, from the middle to the east end of the Island, there was a rain storm when the rain poured incessently for 3 or 4 days and nights so terrifically, that there was a phenomenal rainfall and stock of all kinds were battered or starved to death. as they could not feed. We had record of people who lost from 50 to 75 per cent of their fowls that roosted upon trees, and had no shelter. Donkeys and goats too, which were tethered out, were particularly hardly dealt with, hundreds being found dead after the rain stopped.

In 1912 from the West End along to the middle of the Island, we had another storm—this time a hurricane, but there were heavy rains then all over too.

Here again in 1915 we have had another storm of wind and rain all over, and fowls got so battered that if they were laying they stopped laying, and if they were just about to begin laying at this time of the year, they did not begin.

It pays to have a shelter for all stock, but especially small stock, and more especially poultry.

* * * * *

Although we have been writing about poultry in this JOURNAL for so long and have published a little book on Poultry Keeping in Jamaica, still almost every mail brings us letters from people who are not members of the Society, and who have apparently never read the *Agricultural* JOURNAL, *and certainly* have *not* got our *little* book on Poultry: they ask questions, at the same time stating what they have done, and some of the remedies (?) they have used which are heroic, far more likely to kill than to cure.

How often have we written about roup and given particulars how to treat it? We have at the moment of writing, a letter before us where some 30 head of poultry were attacked by roup and mostly also had a pip on the tongue; the owner had many losses. The treatment given appears to have been a raw mixture of kerosine oil and limejuice, with no diluting agent such as sweet oil when the medicine might have been of some use; but the kerosine oil and limejuice given alone must have been rather hard on the fowls. Pip, which is a hard growth on the tip of the tongue, is usually the result of a neglected attack of roup when the fowls nostrils are blocked up by roupy matter and they have to breathe through the mouth. The usual way that people treat it is to nip off the growth with the finger, in which process half the number of fowls treated lose the whole tip of the tongue—and the tip of the tongue is a most useful thing to a fowl, apart from the cruelty concerned. A tremendous lot of cruelty is perpetrated on animals through sheer ignorance, and now-a-days there is not much excuse for people not being able to get good knowledge as to treatment of all kinds of stock. After the storm there was a large number of cases of roup, also some cases of cramp, i.e., the fowls losing the use of the joints of their legs.

The symptoms of roup are first, a watering of the eyes followed usually by matter in the eyes, and in the nostrils, the matter also exudes from the roof of the mouth. The eyes, nostrils and mouth should be washed out with a solution of Permanganate of Potash in water; then Healing Oil should be touched in the eyes, nostrils and roof of the mouth. In the drinking water for the fowls, a teaspoonful of Eucalyptus Oil should be placed; this is the quantity for 2 quarts of water. A good Tonic Powder should be given in the fowls soft food to stimulate them; but failing this, ordinary ginger, mustard or pepper the first being the best—should be used, 2 teaspoonfuls to a quart of meal.

For cramp, strong embrocation rubbed on the joints of the legs with a pinch of Sulphate of Iron in the fowls drinking water, form usually simple and effective remedies.

MOULTING.—Fowls have begun to moult and eggs are getting scarce, and they are usually scarce between September and Christmas. Encourage moulting fowls to take exercise by giving them good heaps of manure or trash to scratch among and find their food; give them a little sulphur in their soft food—one teaspoonful to a pint of meal is a good dose, which is enough food for 10 fowls at one meal.

The usual tendency is to slack off feeding because the fowls are not laying, but if these fowls have to make a new set of feathers it is reason-

able that they should get as much food as before if not more: they have to make new feathers and get up enough vitality to start laying and keep the laying up some months after they start.

* * * * *

In these times no pullets should be sacrificed for eating purposes, but every one carefully kept to lay. We do not know yet what may happen to make foodstuffs of all kinds scarce and expensive. Eggs are the most nutritious and useful of all foods here: therefore save your pullets.

LIVER DISEASE.—There have been complaints for a long time of a common trouble among fowls in St. Mary, of which the symptoms were—the comb got dark, the fowl dwindled away, sometimes picked up a bit, then got worse and died. This looked like disease of the liver which is comparatively common, but might have been tuberculosis or consumption of the lungs which is not common. Ultimately, Mr. Cradwick sent up a hen which looked nearly dead. It picked up considerably in a few days and had a good appetite—usually a symptom of liver disease. It was then killed and found to have a very bad liver—rather less than half a liver indeed.

The cause of this trouble will be found to be due principally to a large excess of starchy food from chickenhood on, and over successive generations, so that a bad liver or a tendency to it, is inherited. Chickens in St. Mary, we presume, get a superabundance of bananas aud plenty of corn, usually American. We can only advise an instant complete clearing out of any fowls that show symptoms of this trouble, a variety of food, and a weekly scour of Epsoms Salts in the drinking water with a small pinch of Sulphate of Iron in the drinking water twice a week. A good tonic powder whch contains Iron and to which Epsoms Salts is added, might be given in the food in place of Epsoms Salts and Sulphate of Iron in the drinking water, and then all that would require to be done would be to add a trifle of disinfectant in the water every day. A pinch of Permanganate of Potash serves the purpose, or half a teaspoonful of Jeyes per quart of water. *But never neglect the dose of Epsoms Salts once a week. The best* specific, however, for liver troubles is calomel.

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COMMENTS.

STORM.—The JOURNAL for July was printed and ready for issue when the storm of the 13th and 14th happened; that is why there was no mention of it. Advice now for this JOURNAL is rather belated, but the various Instructors have already been through most of thier districts giving advice suitable for local circumstances. The Instructors also have written some paragraphs for this JOURNAL.

In the last JOURNAL there was a paragraph written a month before the storm, repeating advice often given and that is—when bananas are so very plentiful as they were from March to August, instead of writing that they were wasting—"rotting on the ground" —is the familiar phrase, why not make dried banana chips of them, store in barrels to be ground into meal in a common corn mill when required. We know a few people who did this and they have now some barrels of dried banana chips and meal which they can fall back upon.

One planter, we understand, dried bananas (in a Drier) skin and all to make a feed for mules.

From all we learn, the banana plantations in the western part of St. Thomas Ye East, and in the plains of St. Catherine, suffered least. All other parts seem very much the same, practically all the tall bananas are broken or smashed. Those left standing would in most cases be as well down; they will not produce saleable fruit. In the case of small settlers, however, who look for a food supply, they may be left standing to see what they may do. Here and there bananas planted this year have escaped altogether, especially if they were late, and so were still short.

Fortunately other foodstuffs are in the main very plentiful. The corn crop planted March was not damaged; the April planted crop was still mostly green and suffered a lot. One field we know where the still immature cobs were taken in to save them, gave less than one-fourth of the March planting; same soil, same conditions; the grain was of course unripe and shrunk in drying.

Those who ever argued that planters large and small should devote all their land and energies only to the growing of crops for export, have had two object lessons—first, the war—which caused a shortage and decrease of imported foodstuffs and now the storm which will cause a shortage of our chief exportable crops, and consequently a shortage of money; but with plenty of his home grown foods—corn, yams, sweet potatoes, etc., the small settler is in a far better position than if he had specialised all along in bananas and cocoa or bananas and coffee *alone*.

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STORING CORN.—We are glad that Napthalene has "caught on." It needs patience and much insistence to get anyone even to try experiments. Yet the use of Napthalene to keep weevils from corn is no experiment so far as we are concerned. We wrote about it in this JOURNAL and used it, in the year 1900. Owing to the difficulty of getting suitable tins to put up Napthalene we are now sending it out wrapped in Paraffin paper which preserves it all right, and for the convenience of those wishing to test it, we will now send 2 oz. packets for 2d. and 4 oz. packets for 3d.

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ORANGES.—Immediately after the storm, fortunately, the buying of oranges commenced in Manchester; nearly ripe fruit was wanted for the American market, and again fortunately, there was a very early crop in a few districts, especially Southern Manchester—a district that has practically been out of the market for a good many years. Enough ripe fruit, however, could not be got to satisfy the large orders.

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WEATHER.—There are always some compensations. One cheerful optimist, who suffered greatly from drought 3 years in succession, and could not get his ponds, so long dry, to hold water, said to us "Well one can't have everything. My bananas are gone but my ponds are running over, and my cattle have more grass than they can tackle."

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DIVERSIFICATION.—The lessons of years point to the wisdom of reasonable diversification of crops. Through generations of experience the small settler learned this and although he does jumble crops too closely together, he is all for having plenty of different crops. Of course one must have exportable crops and every one should have some if their conditions allow of growing them.

We have continually said that bananas, while a useful quick growing crop, should only be made the medium for growing cocoa and coconuts in the lowlands, and coffee in the hills, and with their aid (bananas) we can raise these other staple crops cheaper than anywhere else. The tendency however, is to be, as it were, fascinated, or hallucinated, by the quick turn over of money with bananas, and neglect to plant what should be the principal crop.

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SEED CORN.—We arrange beforehand to get supplies of well grown and carefully selected seed corn, but sometimes we get disappointed with the quality when delivered and we reject some lots and have then to make other arrangements which are not what satisfy us, but are the best under the circumstances. One trouble at this season is that the spring planted crop is not yet fit when planting is wanted to be done in the middle of August. The growing of seed corn is, or should be, a special business. The taking of the best grains from the best cobs out of a good field planted with selected seed is a step in advance, but there is no saying that these best cobs have not been fertilized from the worst stalks in the field. A three chain experiment was planted with 3 different kinds of seed corn, 6 inches in the row and 5ft. between rows; this gave opportunity to chop out the weakest stalks that came up. Later on others of the least vigorous stalks were cut out. Later again those that did not flag early and profusely were cut out until it came that the only stalks left were thick and strong, some 3ft. apart, few closer than 2ft. Every corn cob must have been fertilized from a strong stalk. Still the cobs showed a great variety of types.

We picked from a field 5 cobs all different in colour, varying from clear yellow to nearly red, yet all planted from selected corn, half yellow half red in appearance. Of course the cobs from which the seeed planted was taken, must have been pollenated from many different types. It would require a course of rigid selection now to get a uniform good type.

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CORN.—A correspondent writes us as follows:—

"I send herewith a sample of the corn and not the worst although not the best of some grown from your hybridized seed.

I must say however that generally speaking the people who got seeds from you are well satisfied and the man who grew this did not grumble; still it is not very satisfactory, is it?"

This was a very poor looking cob, the grains being nearly pure yellow dent corn. We do not say and have never held that yellow corn will yield equally good results everywhere; we have deprecated any *boundless* faith in "American" yellow dent corn as being better than the ordinary Jamaica red corn when the seed of the latter is carefully selected over several crops. The yellow requires better soil and better treatment than our red corn or half yellow and half red to produce the results expected from it. The point of the above letter, however, would seem to indicate that no matter what kind of soil, what kind of cultivation, what weather, what damage by pests, wind, stock, etc., the cobs grown from seed corn supplied by us ought to give large and fine cobs. Surely this is too much faith in good seed corn.

SCHOOL GARDEN COMPETITIONS.—Owing to interruption of plans through the storm and the consequent delay in field and garden operations in different districts, the date of closing for entries in the School Garden Competitions is extended to the 30th September.

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TOBACCO.—There has been a great falling off in the demand for tobacco throughout the world caused by the war, and more than all in the consumption of the most expensive form of tobacco, cigars.

The district of Vuelta Abaja in North Cuba, the greatest cigar producing part of the world has suffered greatly and planters there have reduced their fields and are taking up other cultivations, early vegetables, etc.

Rhodesia, a new country, being filled up with British settlers, which had taken comparatively few years to work up a very large tobacco industry has found the growing of Maize more profitable and has dropped tobacco to a large extent.

Jamaica, so little, and yet with a cigar and cigarette industry of great account to planters in certain select districts, has likewise to reduce its production of tobacco. In the chief cigar leaf growing districts every grower has reduced his acreage: the two largest manufacturing concerns which also grow a considerable quantity of their own leaf have given up most of their land. There is on hand at present nearly two years crop of leaf. Tobacco growers should not be too discouraged; the more other parts of the world reduce their acreage or throw up altogether the more we should stick to our fields; certainly reduce acreage but keep on growing some of the best cigar leaf.

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WAR GIFTS.

We shipped per the Elders & Fyffes s.s. "Cavina" on Monday, the 30th August, the following war gifts. All those interested please note that we try to arrange shipments by the Elders & Fyffes steamers every fortnight:

SHIPMENT PER S.S. "CAVINA" AUGUST 30TH, 1915.

I.—GENERAL GIFTS.—

A. Preserves.

DONOR AND ADDRESS.	GIFT. Kind.	Quantity.
Mrs. Isaacs, Bleak House, Mandeville	Guava Jelly	2 tins equal 20 lbs.
Mrs. Gosset, Hagley Gap	do	1 tin equal 10 ,,
Miss K. Fisher, The Hill, Mandeville	do	2 tins equal 20 ,,
Miss I. Branze, Richmond Park, Spaldings	do	2 tins equal 20 ,,
	Total	7 tins equal 70 lbs.

B. Banana Figs.—

J. F. & J. S. Thompson, Falmouth	Banana Figs	3 cases, 168 lbs. (balance of a ton paid for by the donor and supplied by J. W. Pattinson, Gayle.)

C. Citrus Fruit.—

	No. of Boxes Oranges.	No. of Boxes Grapefruit.
Col. Moulton-Barrett, Rio Hoe, Moneague	7	5
Rev. H. B. Wolcott, Richmond	—	2
Messrs. Ronaldson and Thursfield, Stone'sHope, Newport	—	12
Mrs. H. E. Crum Ewing, Knockpatrick Mandeville	3	—
Miss Ann Bunthorne, Mandeville	1	—
Mrs. W. W. Wynne, Brokenhurst, Mandeville	10	5
A. C. Westmoreland, Annotto Bay	—	29
M Total	21	53

D. Walking Sticks.—

28 bundels *containing* 1,438 *walking sticks, consigned to* "Tit Bits," had to be held over for the shipment a fortnight's time, owing to lack of space on the steamer. A list of the donors of these will be published with the next shipment of War Gifts.

II.—Individual Gifts to Soldiers, Hospitals, etc.—

Donor and Address.	Gift.	Addressee.
Mrs. J. Briscoe, Montpelier	1 case Clothing for Belgians	Mons. Ed. Pollet, 40 Finsbury Square, London, E.C
Mrs. J. Briscoe, Montpelier	1 case Socks for Soldiers	Hon. Secty. Friary Court, St. James' Palace, London, S.W. Q. M. N. G.
R. & C. J. Hay, Kingston	400 Cheroots	Lt. Simon Fraser, 9th. Royal Scots Territorials, "D" Coy., Brit. Exped. Force, France.
Mrs. Clarke, Kingston	1 box Miscellaneous Preserves	Pte. A. R. Clarke, 73, 2nd. Signal Corps, Canadian Exped. Force, Shorncliffe.
Mrs. F. G. Rouse, Kingston	1 box Miscellaneous Preserves	Pte. E. R. Rouse, 115668, M.T.A.S.C., Guards, Div. F. A. W. U., c/o H· Q. L. Henriques, 21 Finsbury Pavement, London E.C.
Rev. J. H. Chandler, Highgate	1 box Preserves and Cigars	Mr. J. Chandler, No. 4 Coy., Inns of Court, O.T. C., Berkhamstead.
Mrs. Milne, Kingston	1 box Miscellaneous Preserves	Pte. A. C. Milne, 49468, 101 Squadron, Remounts Depot (Canadians) British Exped. Force.
J. W. Macgregor, Mandeville	1 box Guava Jelly	Lt. H. S. P. Symonds, 7th London Regiment, 47th London Division, British Exped. Force, France.
Storks deRoux, May Pen	1 box Miscellaneous Preserves	Trooper Louis deRoux, No. 1691, 2nd. King Edward's Horse, 10th Cavalry Reserve, Beresford Barracks, Curragh Camp, Ireland.
Hon. J. R. Williams, Bethel Town	1 box Miscellaneous Preserves	Miss Evelyn Williams, c/o The Matron, Oldway Hospital, Paignton, Devon.
Miss Daisy Verley, Cross Roads, Kingston	1 box Oranges	Pte. L. St. J. Sanguinetti, 4/3 Battalion, Royal Fusiliers.
Miss Daisy Verley, Cross Roads, Kingston	do	Capt. N. R. Sanguinetti, 222nd Coy. R.E., Chatham.

Miss Daisy Verley, Cross Roads, Kingston	do	Midshipman Neville Sanguinetti, R.N.R., H.M.S. "Marlborough."
E. Haughton Sanguinetti, Kingston	do	*Surgeon* Harry Harty, H. M.S. "Marlborough".
E. Haughton Sanguinetti, Kingston	do	Midshipman Roger Gibb, R.N., H.M.S. "Zealandia"
E. Haughton Sanguinetti, Kingston	do	W. E. R. Martin, R.N., Fleet Paymaster, Principal Naval Transport Officer, *Southampton.*
R. S. Haughton, Kingston	1 Box Grapefruit & 1 Box Oranges	Lt. Haughton, Flanders.
A. C. Westmoreland, Annotto Bay	2 Boxes Grapefruit	2nd Lt. O. H. Keeling, Stanford Wood, Bradfield, Berkshire.
Mrs. H. E. Crum Ewing, *Mandeville*	1 Box Oranges	Barra House Hospital, *Largs, Ayrshire, Scotland.*
Mrs. H. E. Crum Ewing, *Mandeville*	2 Boxes Oranges	Bevan Royal Military Hospital, Sandgate.

The following War Gifts were sent to be shipped per the S.S. "Coronado" on the 16th August, but, owing to the storm on the 12th and 13th of that month, Mr. Roxburgh's lot was delayed in arriving until late on Saturday evening, and the others were not in good order, and the steamer leaving early on the Monday morning following. They were therefore disposed of as below.

Donor & Address.	Gift.	Remarks.
Adam Roxburgh, Walkerswood	15 Boxes Oranges 8 ,, Grapefruit 2 ,, Mixed Fruit	15 Boxes Oranges sold* 4 ,, Grapefruit sold 2 ,, Mixed Fruit sold* 4 ,, Grape Fruit sent to H.M.S. 'Isis'
J. W. McLean, Lloyds, Yallahs	4 Barrels Oranges	Repacked.. 1 Box Oranges sold* 2 Boxes and ½ barrel sent to H.M.S. "Isis"
Miss L. Abrahams, Chapelton	1 Barrel Lemons and Limes	Sent to H.M.S. "Isis."

* The proceeds credited to the War Gift Account.

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BRANCH NOTES.

CHESTERFIELD (St. Mary.)—A special meeting was held on Tuesday, 27th July, in the Schoolroom. There were present: Messrs. C. G. Hunt, in the Chair, W. Cradwick and Watts, (Instructors,) eleven members, three visitors and the Secretary. There was some talk about the non-payment of subscriptions by some members. It was moved and seconded that steps be taken to ensure the re-appointment of C. T. Roberts as Authorized Person for the district. The question of the buying and selling of cocoa was considered at some length, but the matter was left for further consideration at the next meeting, when definite resolutions would be formed and sent to the J.A.S. Some questions were put to the Instructor regarding the result of the recent prize-holdings competition. He explained the reason why some competitors did not win prizes. A scheme for cocoa competition was submitted by the Instructor, and he informed the members that this would take place early in 1916. Attention was directed to the various points for which marks would be awarded, and the members were encouraged to enter. There was a good deal of discussion over Road No. 50 of the Annotto Bay division, which passes over the Castleton fording and through the district of Chesterfield. A committee with power to add to their number was appointed. This committee has specific duties given to it to perform in connection with the road. They were instructed to go over the road carefully, noting every grade, and every curve, and then forward another strong petition to the Parochial Board, to show the necessity of raising at least three quarters of a mile of this road. The Instructor intimated his intention of attending the September meeting of the branch. A. VIVIAN HAGUES, Secretary.

MT. CARMEL (Clarendon.)—On the 2nd August, 1915, the Society met. There were present, the Rev. R. E. Philips, President; the Instructor, the Secretary, several other members and many visitors. The Instructor addressed the meeting on Cocoa. The points urged were the planting, pruning and caring of the product. Dealing with *planting*, he urged the members to make use of the seedlings from the Danks Nursery. The young plants should be set out 12ft. apart with no other trees between them. This allows for ease in controlling cases of disease. *Pruning* is a necessity as it advances the bearing capacity of the trees. *Curing* should be even; and patience exercised in waiting until the seeds are properly dry. The seeds to be fermented should be carefully chosen, while the fermentation should not be long. A vote of thanks was accorded the Instructor. T. S. ROBINSON, Secretary.

TROY (Trelawny.)—The regular monthly meeting was held in the Troy School Room on the 3rd of August, 1915. There were present besides the Chairman, Vice-Chairman, Secretary and Assistant Secretary, 11 ordinary members and Instructors E. Arnett and M. Rennie. The Secretary handed in 44 collected from the members towards the Contingent Fund; the Vice-Chairman also handed in 5/- as his subscription and a further sum of 2/6 was also subscribed by 3 other members. The Instructor suggested that it would be a good idea if all the branches in the Parish would unite and send a man from Trelawny to join Lord Kitchener's army. He promised to find out the cost of sending a man and to suggest the idea to the other branches. The Secretary gave notice that at the next meeting he will move that a penny bank be established in connection with this branch. The Instructor encouraged the idea. The Chairman and Assistant Secretary also spoke encouragingly. The Chairman introduced the subject of providing walking sticks for lame soldiers, asking the members to provide some. The Instructor gave a very instructive address on plants disease and insect pests, and introduced Cooper's Cattle Dip and Abol Syringe, promising to give a demonstration in the use thereof at the next morning. Mr. Rennie's intended address on small stock was deferred for next meeting on account of the lateness of the hour. T. PINNOCK, Secretary.

WHITEHOUSE (Westmoreland).—A meeting was held on Tuesday, the 3rd August, at 5 p.m. Members present, eighteen, Instructor Somerville, the Secretary and several visitors. Matters dealt with, viz.: (a) Caterpillars attacking young crops. Instructor advises planting early to secure good growth before the appearance of the pests. (b) Receipts, acknowledging 15/6 as second contribution to War Fund. (c) Mr. Morris' letter *re* Jamaica taking its share in the war. Meeting agreed to call a public meeting on Wednesday, 18th, and Secretary instructed to invite Custos Vickers and leading men to give addresses. (d) Report of delegate to the Half-Yearly Meeting was received and a hearty vote of thanks accorded him for same. (e) The Instructor lectured on Cassava and potatoes, showing their food value, the rich meals they give, and the profit gained in cultivating them on systematic principles. He strongly urged members to plant largely. The necessity of forming an Agricultural Co-operative Credit Society next had attention. The Instructor read extracts dealing with such a Society and other members joined in a discussion on the objects and aims, etc. It was finally agreed to place the matter on the Agenda for our September meeting, when rules, etc., will be submitted and the Society formed. Votes of thanks were accorded the Instructor.

M. Hewitt, Secretary.

CENTRAL ST. MARY (St. Mary.)—The regular monthly meeting was held in the Clonmel Schoolroom on the 5th August. There were present: Messrs. J. A. Banks, President, the Secretary and nine other members. The Authorized Persons of the Branch: Messrs. J. Gordon, J. N. Thompson, Jas. McGibbon (jr.) and Philip Livingstone, gave reports on their work as Authorized Persons. A letter was read from Wm. Cradwick apprising the branch of the free distribution of cocoa seedlings at the Castleton Gardens, and advising that all who are wishful of planting in the approaching autumn should make an effort to secure as many as they required. Mr. C. J. Marzink read an interesting paper on 'Cattle rearing' for which a vote of thanks was accorded him. Mr. Watts, Asst. Instructor, also gave an instructive lecture on cane-growing for which a vote of thanks was also accorded him. Mr. A. M. Webb became a member. M. L. McLEAN, Secretary.

GIBRALTAR (St. Ann).—The regular meeting was held on the 6th August. 26 members several visitors E. Arnett, Esq., Instructor, and M. Rennie, Esq., Asst. Instructor, were present. Mr. R. S. Barnett, President, occupied the Chair. Correspondence were read and dealt with. With regard to the loss sustained by Mr. Henry Case, a member, through the destruction of his house by fire, the Instructor

suggested that the matter be dealt with by the Managing Committee with a view of recommending some assistance at the next meeting. The Instructor and Secretary both spoke of the members' obligation with regard to the fees. The subject of walking sticks for the wounded soldiers was brought up by the Instructor, and all present were unanimous in bringing in sticks on the first Thursday in September. Two new members were admitted. J. B. MORRISON, Secretary.

COMFORT HALL (St. Elizabeth.)—The bi-monthly meeting was held on Friday, 6th August, in the Comfort Hall School Room. There were present: Messrs. D. S. Williams, Presiding; 22 members, the Secretary and many visitors, among whom were some ladies. As arising out of the minutes a full discussion on the working of a penny bank in connection with the Branch took place. Mr. S. Glanville and a few others were of the opinion that the Branch should not interfere with the management of such a business. The Rev. H. G. James and others were in favour of it. The result of the discussion went in favour of the formation of the Penny Bank in connection with the Comfort Hall Mission Station under the management of the Rev. H. G. James. Mr. George Waite, who was present, and lives at the district of Breeze Hole, was nominated as an Authorized Person. The Secretary having received no report from the Authorized Person Ellis, of Cane Wood, was requested to write to him again on the necessity of the Branch getting reports from him regularly or else he must send in his resignation. Mr. Thos. W. Williams reported all fair. Mr. D. S. Williams briefly stated that he attended the Half-Yearly Meeting as delegate. The meeting was largely attended. Much business was done. The question of a market for Jamaica corn was fully gone into, but unless the corn growers will see to the curing of the corn better, there will never be a chance for a better market than at present. He referred to the making of corn meal, and made mention of the different kinds of corn mills Mr. Barclay showed them. It was his opinion that it would be much to the advantage of members if by co-operation one of those mills could be purchased by the Branch. Mr. Powell, the Agricultural Instructor, spoke on the different ways it is possible to preserve corn from weevils, but whatever may be used, thorough and constant sunning is an indispensable factor in the safe keeping of corn. The members of Agricultural Societies should use their best endeavours to stop the evil of selling partially dried corn. The meeting adjourned till 8th October next at 1 p.m. The Committee for arrangement *re* Local Show met for business immediately after the rising of the regular meeting. Mr. S. Glanville was asked to be Chairman of the Committee. Business carried through then was: The Show be held on 2nd December of this year D.V.; that the Secretary to write to the Rev. H. G. James *re* the use of the Comfort Hall Church Commons on the date; that the *Gleaner* be asked for the use of its much read paper as the organ for acknowledging donations for the Show. Arrangement was made for the next Committee Meeting on 20th inst., when more details will be considered. R. A. MUNROE, Secretary.

PEDRO (St. Ann's).—Meeting was held in the Schoolroom, Waltham, on the 9th August, at 8 p.m. Present, 27 members, the Secretary and others. Mr. July Simpson presided. The Chairman dwelt on the good the Society had done and cited a few concrete results, to wit: Grindstone, Corn Mill, Post Office and Telephone, opening of Crown Lands; these fully justified its existence. He pointed out the necessity there was for paying in subscriptions at once, and what would be the result if this was not done. There was marked loss of interest in the Society, traceable to a variety of causes, but the inability of the Instructor to keep his appointments at their meetings and the absence of report of meetings from the JOURNALS, were dwelt on by all those who supported the Chairman. The following persons were elected to serve as officers for the ensuing year: Rev. Thos. Whitfield, President; Messrs. July Simpson, M. A. Harvey, and Chas. Douce, Vice-Presidents; W. J. Francis, Secretary; Mrs. J. A. Francis, Treasurer; Mr. M. A. Harvey, Reporting Secretary. The Rules were revised and amended where necessary. The Society recommends the following as Authorized Persons: Charles A. Beckford, Drummoreland District; Johnnie Walker, York District; Albert Walker, Dromilly District An interesting agenda, including a debate, has been fixed for the next meeting on the 23rd August: "The Goat or the Pig" which pays better in these districts. The leaders are lively men and a profitable time is anticipated. There were a number of complaints about the non-receipt of JOURNALS by members, yet the Post Master declares that some members neglect to take their copies.

M. A. HARVEY, Cor. Secretary.

TRYALL HILL (St. Mary.)—*On the 10/8/15, regular monthly meeting* was held. Present: Mr. John A. Grant, V.P., in the Chair; four members, and the Secretary. Note of absence was received from the President. The following questions were asked by Mr. D. N. Roper: Number of Authorized Persons in the Long Road division? Answer: viz., Messrs. E. Walker, F. Walters and Espeut. Has Mr. *Walters done any work since his appointment*'? *Answer*: Yes. *Monthly* report from Authorized Person Walter: He was called by Mr. Terril June 1915, to arrest a man for the stealing of cocoa pods; culprit was dismissed. He also stated that he has purchased a Badge in place of the one lost. Secretary was asked to write to members who have not paid their dues. Letter from Instructor was read. Members were very pleased with the offer of cocoa seedlings, but regret very much that for the want of land-room they were not in a position to avail themselves of the opportunity. One member gave an order for 1,000. It is hoped that a few others will be in want. Secretary was asked to acquaint absent members about the cocoa seedlings. The Half-Yearly report from the Delegate was well received. The members present were very pleased to know that steps are being taken to make better the peasantry's condition especially in regard to land, and hopes that every district would see its needs and place them before the public in the right way from time to time, until the desired end be obtained. The Society welcomed the idea in regard to the necessary change of the scales at present used. Branch satisfied with the decision arrived at in respect to cocoa pods, especially in the case where it shall be a breach of the law in the near future to purchase or sell unripe cocoa pods. The amount of 2/- was handed over to the Treasurer. The meeting stood adjourned until the second Tuesday in September. A. A. CONSTABLE, Secretary.

UPPER ST. JOHN'S (St. Catherine).—The usual monthly meeting was held on Tuesday evening, 11th August. There were present the President, the Instructor Mr. H. L. Mossman and Secretary, nineteen members, and three visitors. The following matters arising out of the minutes were dealt with: The Instructor informed the meeting that he is making arrangements to get up the cane tops for the members who desire them. As soon as they are obtained, information will be sent to the Secretary. Experimental Plot.—Mr. O. P. Jones and others consented to lead in the matter. The size of the Plot is to be about two square chains. The President promised the spot. Correspondence was dealt with. The delegate then gave his report of the Half-Yearly Meeting for which he was heartily thanked. A warm and lengthy discussion on Praedial Larceny followed. This evil is rampant in some of the districts, and the Authorized Persons seem to be inactive. Some will not attend the meetings, nor give any report of their work from time to time. A resolution was then passed: That any Authorized Person who is absent from the meetings on three consecutive occasions, will be dealt with by the Branch, and his name will be submitted to the Parent Society to be struck off the list. Mr. Alfred Brown reported that he was watchful, but praedial larceny is on the decrease in his district. Mr. Green's motion *re* Loans, now came up for discussion. Much was gained on the subject from the delegate's report, so it was agreed on that the matter remain as it is. Mr. Alfred Brown wanted to know: 1. How to grow ginger, and Mr. John Harrison: The cause of decay on coconut leaves. The Instructor answered suitably. Subscriptions were received.

E. THOS. HAMILTON, Secretary.

ENFIELD (St. Mary.)—The regular monthly meeting was held in the Schoolroom on the 11th August, 1915. There were present: Rev. W. S. Taylor, President; 3 Vice-Presidents, the Treasurer, the Secretary and 11 members. The President gave the report of his visit to the Half-Yearly meeting, stating that nothing decisive has been done *re* the Produce Protection Law, as the Law is in the hands of the Attorney General for revision. The President also read a communication from Mr. Cradwick, advising him that good cocoa seedlings can be had at Castleton Gardens free to any member of Branch Societies, who need them. Final arrangements were made for carrying on the picnic in connection with the Branch, on the 12th instant. A few of those who were present, and who have gone abroad, were asked to give their experiences on the state of things in this country as compared with the foreign countries. All spoke favourably of Jamaica, and more especially of the great protection we receive under the British Flag. Notes: Again we are face to face with great distress into which we have been suddenly plunged by the hurricane of the 12th inst. The small settlers of this district were just beginning to rejoice, as they were able to sell a few bunches of their bananas, which had been spoiling in abundance a fortnight before the crash came. Now everything has been swept away.

J. Z. JOHNSON, Secretary.